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DOMINION DENTAL JOURNAL

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No. 1.

Original Communications

TEACHING DENTAL ANATOMY AND OPERATIVE TECHNICS.*

BY A. E. WEBSTER, L.D.S., D.D.S., M.D.,

Professor of Orthodontia and Demonstrator of Operative Technic in the Royal College of Dental Surgeons of Ontario, Toronto, Canada.

In presenting this subject the author presumes that dental technics should be part of the prescribed course of a dental school, and, therefore, will not discuss the merits of technics as applied to dental teaching.

For convenience, the subject is divided into dental anatomy and operative technics. The anatomy can be taught best by presenting to the student large models of the teeth while, at the same time, the teacher directs the student's attention to the gross landmarks and general form of the parts. During this demonstration the student should have examples of the natural organs in his own hands, and be endeavoring to identify the landmarks pointed out on the charts and models. Immediately following this exercise the student selects a piece of Stent's modelling compound, large enough to make a tooth. From this piece of compound he carves a tooth slightly larger than the natural one he has used as a guide.

These compound teeth are now invested in the lower half of the dental flask with their crowns upward. The whole upper set of fourteen teeth may be invested at the same time.

When the plaster-of-Paris is hard it is soaped, and the other half of the flask filled. When this is hard heat the flask sufficiently to soften the compound slightly, separate, remove the compound and in its stead pack grey rubber (made by C. Ash & Son)

* Read before the International Dental Congress at Paris, August 8th, 1900.

readjust the halves of the flask and vulcanize as in any ordinary case. When the vulcanite teeth are removed from the flask and cleaned up, the student, after further directions from his teacher, carves and polishes them until they are an exact reproduction of the natural teeth he has used as models. In carving, the student is given a great deal of latitude. He may carve any type of tooth he may choose, but of course the whole set must harmonize.

The next step is to set up these rubber teeth in a block of beeswax, being sure that the block is not too large to fit comfortably into an ordinary dental flask. It is well to have a large number of plaster casts of typical dentures, palates and gums so that the student may select the type of set-up that will suit his particular form of teeth. The teacher should call attention to the general forms from charts and large models. The form of the palate, gums and rugæ must be carved in the wax. When this is completed the beeswax block, with the teeth set up in it, is invested in the dental flask, the same as in a case of vulcanite denture. Warm the flask, separate it and carefully remove all the wax. In place of the wax pack a rubber which will vulcanize in about fifteen minutes at 270° F. This rubber, when vulcanized, must be flexible enough to allow the teeth to move slightly more than those in the natural jaw, and, at the same time, it must be rigid enough to hold the teeth firmly in their positions while they are being operated upon. The rubber used may be obtained from any rubber works at about 30c. to 50c. a pound. The stock used to make gum boots serves the purpose very well. After vulcanization the form should be carefully cleaned up, using pumice and a stiff brush wheel to remove the stains from the teeth.

When a student makes a form such as described, we are certain that his knowledge of the subject is as perfect as he has done the work, which cannot be said of an oral or written discourse on the subject. Besides, he has had an excellent training in form which can never be obtained in any other way than by the sense of touch. Then again, the manual training has all been in a direct line of what will be of most service to him in his future practice. He has learned the use of compound, plaster-of-Paris, dental flasks, two kinds of rubber for vulcanization, vulcanizers, lathes, cutting tools, etc.

Dental anatomy completed, the tooth form is ready for dental operations. Every point in the use and application of the rubber dam can be demonstrated: ligature, clamps, forceps. Immediate separation of the teeth can be made under the same difficulties, and with the same success as in the mouth. Slow separation with cotton will act just as it does in the mouth. The teeth, after being separated for a day or two, will slowly come back to their original positions. The classification of cavities and all the technical terms used in connection with their preparation, can be very easily

exemplified and illustrated. The student has a chance to see and understand what is meant by extension for prevention, point of contact, interproximate space, gum septum, direction of force of mastication, seating of fillings, retentive form to cavity, etc. He really sees how a separator acts and knows what it means to prepare a proximate cavity, put in a filling and finish it; and, above all, he can see when he takes off the separator and the teeth come back to position whether he has made proper extension for prevention, preserved the interproximate space and obtained a proper contact point.

Every filling material that is in use may be inserted under the same conditions as exist in the mouth, except the moisture. The use of the matrix can be learned better on this form than in the mouth. The student has an opportunity to learn the use of every instrument used in operative dentistry. The usefulness of the form has not ended when the student has completed his operative technics. It can then be used as a form on which to construct regulating appliances. For this purpose it is admirably adapted. Bands may be pinched on the teeth just as it is done in the mouth. The use of springs, jack screws, traction screws, contouring appliances and retaining appliances can be illustrated. The student can actually see whether his appliances moves the teeth in the direction he expected.

In presenting the whole subject of technics, the teacher should never forget that he is teaching dental students, and that everything that the student does should have some bearing on the subject of dentistry, and that bearing should be pointed out to him, first, because it will enlist his interest, and second, because he must be shown how to use his knowledge.

COCAINE POISONING.*

BY C. S. MCARTHUR, D.D.S., PARRSBORO, N.S.

With my short practical experience as an operator it would be presumptuous to attempt to advance anything new with reference to this important topic; but if, by utilizing the somewhat meagre resources at my disposal, I can arouse some dormant thoughts or awaken a healthy discussion and by that means hold your attention for a time, I shall feel that my efforts have not been futile.

By so frequently and successfully taking advantage of the desirable properties offered by cocaine, we naturally become, shall I say, "careless" in its administration, and it remains for the casual

*Read at second biennial meeting of Nova Scotia and New Brunswick Dental Societies, August 29-30, 1900.

"bad result" to point out to us that we cannot be too careful in the use of this "most powerful of all local anesthetics," possessing as it does such beneficial and at the same time such pernicious qualities. As the result of such an unfortunate occurrence, I have chosen "Cocaine Poisoning" as my subject for this morning.

Discovered by Gardeke in 1855, and called by him "Erythroxyline," it was first thoroughly studied by Dr. Albert Neimann, of Goslar, who five years later gave it the name by which we know it. Dr. Neimann's experiments, however, attracted but little attention and it remained for Dr. Koller, of Vienna, in 1884, to conclusively demonstrate its great practical value as a local anesthetic. Its advent as a valuable adjunct to our success is thus easily within the recollection of many of us. It is unnecessary to dwell upon the physical properties of this alkaloid, for our acquaintance with it is practically restricted to the two forms in which we use it, namely, the hydrochlorate or muriate, and the citrate. Referring to the physiological action, Wood says that "although habitually employed as a stimulant by the natives of western South America, our knowledge of its action upon the human organism is very incomplete (and but few scientific observers have given detailed reports of the symptoms it causes). While varying in their conclusions regarding many of its physiological effects, all investigators concur in praising the peculiar sense of calm and happiness, the insensibility to fatigue and the increase (*to an extraordinary degree*) of both bodily and mental activity produced by the drug. It will not take the place of food, although temporarily putting aside the pangs of hunger. Its moderate use is not injurious, but the habit of its excessive use is readily acquired and produces very grave results. It has no cumulative effects. Its smallest fatal dose is not certain, but it is recorded of a German apothecary that he took with suicidal intentions twenty-two grains in a glass of beer and after twenty-four hours experienced no ill effects beyond a suppression of urine.

Montegazza states that after taking two hundred grains of the leaves (417 grains cocaine) he was in a short time plunged into a condition of peculiar physical beatitude. Very shortly he experienced a plentitude of power accompanied by such a real increase of physical ability that he was enabled to perform gymnastic feats which were ordinarily impossible to him. This state was followed by a natural, profound sleep lasting sometimes the whole of twenty-four hours. On another occasion he took thirty-five grammes of the leaves, one hour later nine grammes, etc., until in two hours he had taken sixty grammes (about two grains). The heart which after the first dose had been slow in its action, directly after the second dose became rapid and violent, but at the end of the two hours the palpitation had ceased although the pulse still beat 120 per minute. He was now possessed by vivid and pleasant hallucin-

ations and rapidly passed into a delirious condition, in which he appeared to himself to be unconscious, although when addressed he would answer rationally. An hour or two later he was sufficiently calm to say that "God was unjust in that he made man to live without eating coca. I prefer a life of ten years of coca to one of a thousand years without it." As this state was passing off he was seized with an irresistible desire to reproduce its delirium by taking more coca. Finally, however, he fell into a condition of sleep, lasting three hours, after which he was able at once to resume his ordinary occupation and showed no physical evidence of his coca debauch.

Sir T. Lauder Brunton in his "Action of Medicines" (edition 1899) tells of a friend of his and a professor of physiology, who wishing to have a tooth extracted, went to a dentist and had cocaine injected hypodermically. It had the curious effect of completely removing all power of movement, though it left his sensorium unaffected. He was unable to move or breathe and artificial respiration had to be maintained for many hours, after which he recovered completely.

It was my privilege while at college to see two cases of cocaine poisoning. The victim and operator (the same in both cases) were classmates of mine. The operation was the removal of a live pulp previous to making a Richmond crown. For the purpose of anesthetizing the nerve a 20 per cent. solution of cocaine was used with the cataphoric apparatus. When the current had been on about two minutes the patient suddenly began to cry out, and after a few tetanic spasms the body became perfectly rigid. Artificial respiration and brandy were used and in a short time the patient was sufficiently recovered to walk to her home a few blocks distant. In the second case similar symptoms presented themselves almost instantly upon application of the current; this time it was more difficult to effect a recovery and she had to be removed to her home in a cab. Next day, however, she attended classes as usual and showed no ill effects of the attack.

A few weeks ago a patient and personal friend of mine came to my office to have a tooth extracted. Although I knew him to be an inveterate tobacco user, it did not occur to me to inquire concerning the condition of his heart. Desiring to get as perfect anesthesia as was practicable, I made a fresh solution of cocaine (P.D. tablet cocaine, $\frac{1}{4}$ gr.; morphine, $\frac{1}{8}$ gr.; and atropini, 1-120th gr.), dipped the point of my hypodermic needle in pure carbolic acid and injected about ten drops of the solution. Patient got up and went to the reception room where he laid on the sofa for a minute or two, but at my call got into the chair, telling me as he did so that he felt sure he would faint before I got the tooth out. While lancing the gum I noticed his eyeballs roll upwards, his face become very pallid, then livid, resembling the effects of nitrous

oxide anesthesia. Thinking it a simple faint and that I could get the tooth out before he survived, I grasped the forceps, but to my surprise could not get his mouth open. Just then he began to froth at the mouth and shook so violently that he slid down in the chair. I lowered the back of the chair so as to get him in a horizontal position. While pulling him up he began struggling, and struck me in the face with both hands sufficiently hard to knock me clear of him altogether. He now became perfectly rigid and I said to myself "cocaine poisoning." Respiration had stopped and his pulse was quite feeble and rapid. I emptied my syringe, and as quickly as possible grabbed for the ether bottle which, as is usual in such cases, was not there. I next held the ammonia bottle to his nose for a moment and began artificial respiration. After two or three movements he began taking long deep inhalations, exhaling forcibly. This naturally greatly relieved my feelings and I then bathed his temples, forehead and the back of his neck with cold water. In a few moments he became conscious, but at my bidding remained perfectly quiet. He now complained of being unable to get a satisfactory breath, and as soon as practicable I helped him to the sofa and went across the street to get some brandy, bringing back with me a physician whom I happened to meet at the office door. I did not let on to the M. D. that it had been anything but a fit or syncope, and he, after examining the patient and advising him to defer the operation till another day, left us. I gave the patient a drink of brandy and, as he was determined to have the tooth out, a second drink about five minutes later. After this I succeeded in extracting the troublesome tooth "absolutely without pain."

Like all local anesthetics it affects the posterior or sensory columns of grey matter in the spinal cord, the cerebrum being the most susceptible portion of the body to its influence. The sensory nerves are affected earlier and more powerfully than the motor, both being eventually paralyzed. The more salient points of its physiological action in large and toxic doses are:

Nervous System.—A peculiar pendulum-like motion of the head, accompanied by incoördination of movement, or muscular contractions and twitchings. These symptoms are supposed by some to be a result of the drug's action on the semi-circular canals.

Circulation.—Pulse rate is increased by depression of the cardio-inhibitory fibres of the vagus, being fuller at first, but gradually becoming fainter. The heart continues to beat long after respiration has ceased.

Muscles.—Muscular contractions are prolonged.

Respiration.—Breathing becomes at first rapid and shallow, then irregular, with interruptions, after each of which the movements begin deep and slow, but become more rapid and shallow until the next standstill. Death is produced by paralysis of this function.

Eye.—The pupils become widely dilated, due to its action on the peripheral endings of the sympathetic nerves, and the eyes seem to bulge from their sockets.

Irregular, weak pulse and dyspnea warn the operator to be on his guard while the symptoms of poisoning may briefly be annotated thus: Restlessness, excitement, rapid breathing, muscular twitchings, followed by collapse, slow, labored breathing, pupils widely dilated, eyes seemingly protruding from their sockets, epileptiform convulsions, loss of consciousness. Any tendency on our part to confound these with the symptoms of syncope or fainting may be counteracted by remembering that in the latter condition the pulse is feeble, respiration diminished only in extent, no twitchings occur except as patient awakes, and no paralysis precedes or follows the fit.

The question naturally presenting itself here is: "What treatment should be resorted to when these untoward symptoms present themselves?" It is self-evident that respiratory stimulants are primarily indicated and among these I may properly mention atropine, strychnine, amyl nitrate, ammonia, strong coffee, artificial respiration and volasem. Of volasem just a word or two. This comparatively new drug is an extract of violet and has proved itself almost a specific antidote for cocaine. It is administered in from one to five-drop doses, preferably by the mouth, before injecting the cocaine. In cases of cocaine poisoning more prompt results will be obtained by hypodermic injection. Used without cocaine a drachm will produce death. It neutralizes the general effect of cocaine, but does not alter its local action. Dr. J. Lenox Curtis, of New York, writing in the *International Medical Journal* for July, 1900, and in the *Dental Cosmos*, speaking of this drug, says, "With volasem at hand, I employ a saturated solution of cocaine, and have no hesitancy in using it as freely as water." Unfortunately, I cannot speak of this drug from experience, but if by its use, or as a result of an idea I may have suggested, any of you may be forearmed for such an unpleasant experience as fell to my lot, I shall feel amply rewarded and that the object of this paper has been accomplished.

IMMEDIATE TREATMENT AND FILLING OF FOUL-PULP CANALS.*

BY DR. F. W. BARBOUR, FREDERICTON, N.B.

The three main requisites in remedial work on foul pulp-canals are comfort, permanence and speed. The treatment adopted by me for the past seven months has had less unpleasant consequences

* Read before the Nova Scotia and New Brunswick Dental Societies, August 29-30, 1900.

than any previously used, the perfection which I had almost believed I had reached, being not quite realized, however, as will be admitted in figures given later. The title conveys the knowledge that as far as speed is concerned, time has been reduced to a minimum: one sitting only being required to perform the operation from start to finish.

Regarding permanence, I must admit that seven months is rather short for accurate judgment, but I may say this, that so far as my knowledge is concerned, no recurrence of sepsis or inflammatory conditions have been reported up to date. The question of rapidity may not be considered so important, I may also say essential, by all dentists as by myself. A practice largely made up of patients who can remain in the city for but a few hours, and where neglect or extraction are the only alternatives, requires a means by which the evil may be quickly remedied.

All practitioners are acquainted with the results often accompanying foul-pulp treatment: the pain and, later, swelling and sometimes suppuration; and the effect on the patient, shown especially upon their call upon us, if we are so fortunate as not to be required to make the call ourselves. A late journal gives an interesting discussion in a German society on this matter, the most helpful suggestion for easing the discomfort being the placing of ice-chip between the cheek and gum over the affected part.

For years the problem before me was along this line of cure rather than prevention, with very unsatisfactory results. More latterly I changed my methods of disinfection several times, according as they were recommended in dental publications. No one idea proved successful. One idea, the placing of a twenty-five per cent. solution of hydronaphthol unsealed in a newly-opened canal, was followed by about the most severe trouble I have ever had, confining the patient to her bed for nearly a week. My most recent plan, which, as stated above, has been in use for seven months, has proved so successful in my hands that I feel that it is worth telling. The combination of others' ideas with some of my own have made up a whole which I will explain in as definite a manner as will be necessary.

In describing the operation, I leave out those cases which have a fistulous opening—we all, I presume, having been used to remedy such cases at one sitting.

My mode of procedure is this: After washing out the tooth cavity and applying the rubber dam, a thorough opening is made into the pulp chamber and the canals cleansed mechanically with Donaldson's cleansers, as perfectly as may be. Sulphuric acid (C.P.) is introduced into the canals; both for its disinfecting and dissolving qualities, neutralizing it after five minutes, with bicarbonate of soda solution, and repeating, if necessary, until perfect accessibility is attained. I wish to

express myself as opposed to the use of canal drills, except, of course, for the reception of crown posts. Following the above, a five per cent. solution of formalin is applied, remaining for ten minutes, to be succeeded by repeated insertions of Labarraque's solution, used in pumping motion on fibres of cotton wound on a smooth, fine broach. After ten or fifteen minutes of this, the canal is considered perfectly aseptic and ready to fill. Dryness is secured by the use of alcohol and hot-air syringe.

The filling material that has been found most suitable, is that called Jodoformagen cement with the addition of oil of cloves to the accompanying liquid, two parts of the latter to one of the former. This is chosen because of its soothing and antiseptic qualities. The eugenol contained has a very quieting effect in inflammatory surfaces, and the formaldehyde gas, which is claimed to be liberated for some time after insertion, seems to have the effect to prevent the reproduction of any bacteria which may have survived beyond apical foramen. The objectionable quick setting qualities of this cement is overcome partially by the oil of cloves, but particularly by mixing over quite hot water to consistency of thin cream. Insertion is made by the use of a slightly serrated broach, and patience. In multi-rooted teeth, it may be well to mix for one canal at a time. The canal being filled, I have not hesitated to insert the crown-filling immediately, gold as well as amalgam, and in some cases crowns being applied.

I have found it convenient to take advantage of a cavity in a contiguous tooth, so that its filling may be proceeded with at intervals, thus saving much time.

I have continued the habit of applying a counter-irritant to the gum at completion in most cases, and it is probably good practice to do so.

I would emphasize the importance of the use of fresh, pure drugs, and especially the sulphuric acid. After several cases of after trouble, I found that instead of acid readily destroying cotton fibre as it should, it failed to do so at the end of five minutes. Since replacing the acid I have had no further trouble.

During the time that I have followed this procedure, the following cases have been attended. These are not picked cases, but include every operation where the above treatment has been carried out, and every case presenting itself has been operated upon. The total number of cases has been fifty-one. Number reporting succeeding inflammation, five. Of these, three showed swelling, two of which were in one mouth where the two teeth had been treated together during patient's dinner hour. Another, for the same patient, later, was normal afterward. The balance of those having trouble mentioned at a future sitting that some inconvenience was felt anywhere up to twenty-four hours afterward, none of them, however, applying for any attention from me.

Special cases may be referred to: Two adjoining teeth done at one sitting, four persons. Number having crowns inserted immediately, four. No cases where gold fillings or crowns were put in reported any trouble.

As far as the length of trial gives the ability to judge, I feel that there is here secured the long-desired means to most comfortably and speedily treat and fill foul-pulp canals.

OUTLINE OF PRACTICAL ORGANIZATION OF DENTAL SERVICES IN PRIMARY SCHOOLS.*

BY PROF. LIMBERG, ST. PETERSBURGH, RUSSIA.

Translated by Achille A. Pinard.

In order to justify the actual need of regular and systematic care of the teeth of poor children, it is necessary to establish dental dispensaries in the primary schools, where the pupils could be sent to have their teeth examined and treated. At the same time we ought to develop in the masses the necessary knowledge, by means of the schools, as to the care of the teeth. The teachers and dentists appointed for the work could teach the pupils how to keep their teeth clean. Besides, each pupil could be provided with a small card containing rules for their guidance, and those who could not afford it could be given the necessary appliances to clean their teeth. In this way, insuring the regular care of the teeth, we would, at the same time, be able to instruct the people on the general hygiene of the mouth.

Granting the immediate necessity of these dental inspections for the children of poor parents, it is desirable to establish from the beginning a service of this kind in order that the care of the teeth in the pupils of the primary schools may be gradually developed. If the municipal authorities of the various cities considered it useful and practical, and put at the disposal of a dental surgeon an office in each of its large academic institutions, such a dispensary, under the direction of a dentist, helped by ten assistants, working three hours a day, would be in a position to treat and keep in order the teeth of 4,500 children (ninety-four classes) according to the following calculations: The examination and care of the teeth twice a year, allowing, in the first part of the year, half an hour per child for the first treatment and another half hour in the second part of the year for another treatment; thus, an average of one hour would be necessary for each child. Ten specialists working and examining for three hours (not including time required to put the instruments in order) would be able to look after fifty pupils at each visit; in one week of six days, three hundred; in fifteen weeks (academic year), 4,500 pupils.

*Read before the International Congress, Paris, France.

For the installation of a dental office where we could treat the above number of pupils, representing ninety classes, the following conditions are necessary: In a large academic institution it would be advantageous to place the dental dispensary in the centre of the building. The operating room should be large enough to contain the instruments and allow ten dentists to operate.

In the examination of the pupils the dentist should not use instruments of the municipal physician or of the municipal hospitals which are used on patients affected by contagious diseases.

The visit of the children should be daily, excepting Sundays, holidays, and the academic vacation. Its length should be three hours; but in the beginning, on account of the neglected state of the pupil's teeth and for other good reasons, the examination of fifty children would take an extra hour, making four hours a day. The time most suitable for this visit, taking also into consideration the pupils' interest, could be from four to seven o'clock p.m. The order in which the classes are treated should be so arranged that the larger schools (those containing about ninety classes) would have an appointed day for each class to meet at the dispensary. Should there be any spare time caused by the absence of some children, the dentist could treat those suffering from toothache, etc. The results of the visits and treatments should be registered in books, according to a rule, for the purpose of supplementing dental statistics. Dental treatments in the primary schools should be given free of charge.

Those in the dispensary should be the surgeon-dentist director, his ten assistants and a boy. The director must be a man who has specially studied dentistry, or who is a surgeon-dentist—or, in exceptional cases, a licentiate. The director is held responsible for all operations performed in the dispensary; he must examine the teeth of each child, give instructions for treatment, supervise the work of his assistants, and treat, personally, all serious cases. It is he who informs the principal as to the order in which each class is treated in the dispensary; he registers the visits and the treatments given, and twice a year sends a report of his dispensary work to the municipal authorities. As the success of this work depends on the scientific knowledge, the aptitude and the ability of the director of the dispensary, it is desirable that the services of persons of high professional standing be secured, and the yearly remuneration should be at least 1,200 rubles (\$876.00). The assistants should be either licentiates or senior students of dental schools. The choice of the assistants rests with the director of the dispensary; they receive no remuneration, but have the advantage of acquiring knowledge in their specialty under a skilled director. Capable assistants can always

be secured on account of the desire of young specialists to complete their knowledge by practical experience, and especially when we consider that the remunerative positions as dental specialists in the schools of the government will be most likely filled by the dispensary assistants of the primary schools, who by their constant practice will acquire considerable experience. In this case the assistants, after having worked two years in a dispensary, could be officially recommended to higher grades. Moreover, it would be advantageous to stimulate their zeal by gifts, consisting of purses given on the demand of the director. The work of the dispensary boy can be performed by the janitor of the school for a slight remuneration. The installation of a dental dispensary may cost 1,500 rubles (\$1,100.00); the yearly expenses, not counting the directors salary) would be 400 rubles (\$292.00).

The dispensary must consist of two very large rooms. In one there must be room for ten dental chairs about three feet apart. The twenty or thirty children waiting for their turn may remain in this room; but if it is not well ventilated the children should remain in the recreation hall. The second room is necessary for painful operations, such as extraction, etc.; it must contain one chair and the necessary instruments.

Besides this project the commission discussed dental services in the secondary and classical schools, and thought it advisable that the different administrators participate in this work in the hope that the different opinions on this question would result in the organization of dental examinations in every school without exception, according to a uniform system. The commission has, moreover, decided to make inquiries on the state of the teeth in Russia, according to a special programme, in order to set forth by these studies the importance of the many causes and conditions of degeneration of the teeth, the necessary measures to adopt, in order that the people may have dental attendance, etc. The programme thus formed has been presented in a special communication. Lastly, the commission is going to circulate among the people the rules of hygienic dentistry, by means of pamphlets and public classes, etc.

SYNOPSIS.

1. Dental caries, found in 95 per cent. of the children in cities, demands that the society should take measures for the regular examination of the teeth.

2. The children's physicians, in attracting the attention of the parents on the importance of their children's health in giving them regular and systematic dental care, would largely contribute to the advancement and progress of our scheme.

3. General knowledge of the causes of toothache; means to keep teeth in order by regular attendance, should be made part of the teaching of general hygiene in the schools.

4. When the children are admitted to the schools attention should be directed to the state of their teeth and their dental health made perfect.

5. In reference to the care given till now in the academic institutions the palliative treatments and extraction should be replaced by conservative and systematic treatment.

6. The boarding schools should have a specialist in charge to examine the children's teeth at least once a year, and to treat them regularly, if possible, in the establishment itself. The day-schools should be examined by the appointed dentist, but the treatment may be given outside the school in a specialist's office or at a good dentist's.

7. For poor children it is necessary to establish treatments free of charge ; these may be regular and systematic.

8. The remuneration of the specialist must be valued according to the number of pupils in such a way that we can be sure of systematic treatment of the teeth of the pupils in proper order.

Proceedings of Dental Societies

NOVA SCOTIA AND NEW BRUNSWICK SOCIETIES.

The second biennial meeting was held at St. John, N.B., August 29th, 30th and 31st, 1900.

Dr. C. S. MCARTHUR, Parrsboro', N.S., read a paper on "Cocaine Poisoning." (See page 3.)

Dr. MOORE, St. Stephen, said he had listened to Dr. McArthur's paper with a great deal of interest. He himself had never had any trouble with cocaine. A weak solution, perhaps less than 1 per cent., was what he used, and found no difficulty in extracting, if he took a little time. Cocaine, Dr. Moore thought, was a good thing in extracting. He had never experienced any trouble in injecting it into the pulp, but would be afraid of a strong solution.

Dr. MCINTYRE, Summerside, P.E.I., enjoyed the paper, being particularly pleased with the young doctor's handling of his subject. He believed with Dr. Moore in the virtues of a weak solution of cocaine. With a weak solution larger injections were quite possible. He was always careful in its use, however, as he believed he had seen toxic effects from it, though not serious. Dr. McIntyre also thought the use of cocaine was safer in a cool temperature. It is a valuable drug, but one dentists have to fear. Some practitioners won't use it at all.

Dr. H. P. TRAVERS, St. John, said he had never used but a 1 per cent. solution of cocaine.

Dr. JAMES MANNING, St. John, had used a solution of cocaine, preferably a weak one, and never too much. He had

injected it with toxic effects, even with this weakened solution, but none of the cases resulted seriously. It had also been used by him in destroying pulps.

Dr. J. M. MAGEE, St. John, congratulated Dr. McArthur on his paper, but said he could not very well criticise it, for he was not familiar enough with cocaine, using it very little. He knew of its toxic effects. Dr. Magee once had cocaine used on himself by Lenox Curtis, and tried to experience the sensations brought about by it, but couldn't because the antidote, volasem, had been administered. Cocaine did not appear to Dr. Magee as having very marked effects, and he did not want it. The main thing in the case of a cocaine accident is stimulants—perhaps brandy, for it is generally the handiest. Clear cocaine, as Curtis used it, Dr. Magee preferred, if he used it at all.

Dr. GORHAM, St. John, used cocaine considerably, having trouble once—only ten days ago. This case he fortified with whiskey, and the cocaine he used was mixed with a few drops of alcohol. Too much alcohol would cause a burning sensation. Whiskey is better than brandy as a stimulant, as it acts more promptly. In using vapocaine, Dr. Gorham said he rubbed it back and forth on the gum, and then applied the rubber dam or clamp with little or no pain.

Dr. BARBOUR, Fredericton, N.B., had a bitter experience with cocaine once. The patient was affected four hours, and medical doctors were in attendance. Cocaine in this instance had bad effects from pressure in the pulp. Clear crystals were used, and the patient was rigid for five or ten seconds. Chloretone, supposed to be harmless, has also been used, but has had bad effects from it too, the patient in this instance being a man.

Dr. GORHAM rose again, and said he frequently refuses to use cocaine, especially on anemic people.

Dr. HOOD, Beverly, Mass., said he found best success with 2 per cent. cocaine and witch hazel. This mixture is allowed to stand only forty-eight hours.

Dr. CAMPBELL, Lynn, Mass., said alva-tundo was a good thing in proprietary solutions. It is a 1 per cent. solution of cocaine with admixtures. A slight sediment forms in it, but the solution is all right when filtered.

Dr. MCARTHUR closed the discussion with a few remarks as to the use of stimulants.

After the discussion of Dr. McArthur's paper, the dentists repaired to another room, where Dr. H. E. Belyea, of St. John, conducted a clinic—subject: "Combination Gold and Amalgam Contour Filling, using Matrix." Dr. Belyea's clinic was given to demonstrate an easy and accurate method of inserting substantial fillings in cavities difficult of access at the cervical margins, and where a lengthy sitting is to be avoided. This is accomplished by using a combination of amalgam and gold with the aid of a hard

matrix. A strip of the matrix metal, which is made of thin copper, and coated with soft solder, is passed around the tooth after the cavity has been prepared, the two ends grasped at the buccal surface with a pair of pliers, removed and held in the flame until the surface flows sufficiently to join the ends. This is again placed upon the tooth, wedged at the cervical margin with a bit of soft wood dipped in sandarac varnish, and the tooth is ready to be filled. Quick-setting amalgam is inserted at the cervical margin, and sponge gold packed into it until the surplus mercury has been absorbed, and a bright surface is obtained on the gold. The filling can then be completed with any gold the operator desires. One of the greatest advantages of this method is the ease with which the cervical margin can be finished.

Dr. J. M. MAGEE, St. John, gave a clinic on "Contour Work, using Steel Matrix," to which much attention was given. Dr. Magee said the object of his clinic was to demonstrate the restoration of badly carious teeth by the use of the steel matrix in conjunction with the Perry two-bar separator. The posterior tooth had a cavity involving two surfaces, the mesial and grinding surfaces extending far below the gum line, and the buccal wall badly broken away. That was first filled by fitting a matrix and tying it in place, afterwards adjusting the rubber dam. When finished the other cavity is prepared, a matrix fitted, and the Perry two-bar separator at once applied, making sufficient space to at once contour the other tooth.

Dr. MCINTYRE gave a clinic on "The Treatment of Pyorrhea," in which he demonstrated the use of some of the scalers devised by Drs. King, Tompkins, Allport, Harlan, Abbott, and others. He also showed Dr. Hinman's method of applying lactic acid to pyorrheal pockets, after the deposits are removed, and after the application of a 3 per cent. or a 5 per cent. solution of pyrozone.

Dr. F. W. BARBOUR, Fredericton, N.B., read a paper, entitled "Immediate Treatment and Filling of Foul Pulp Canal." (See page 7.)

Dr. MCINTYRE, Summerside, P.E.I., opened the discussion by endorsing the line of treatment followed by the writer of the paper, especially the use of sulphuric acid. In his own practice he does not immediately fill certain teeth, but Dr. Barbour's statistics proved that it must be efficacious.

Dr. WETMORE, St. John, preferred taking plenty of time before filling, and giving care to selection of filling material subsequent to removal of foul pulp.

Dr. G. K. THOMSON, Halifax, found more trouble with laterals in filling, and said there was undoubtedly a good deal of carelessness in the profession as to the filling of teeth. The rubber dam is not always applied. His plan was to get all the pulp out, and not to go all the way with the drill, but to let sulphuric acid eat away what remains. Had been using chloro-percha but, now uses formaline.

Dr. MOORE, St. Stephen, said there were many methods of filling root canals, and each doctor might have a certain way. Personally, all his cases have been successful. Six or seven years ago he filled immediately a lot of root canals. Oxychloride of zinc was used, mixed thin, and worked up on a broach in the canal, then with gutta-percha forced the filling home. Never filled any with gold. Had used Soderberg paste, too, but chloro-percha very infrequently.

Dr. SUMMERS, Moncton, thought the seven months referred to by Dr. Barbour a little too soon to reach any conclusions as to permanent success in filling. A tooth with dead pulp will lie a long while dead by accumulation of gases. Thought a lot of irritation was caused by too much mechanical treatment, as it often starts inflammation of peridental membrane. The sooner the canal is opened and made aseptic without much force, the better.

Dr. HARDING, Yarmouth, thought seven months would be a fair length of time if twenty-four hours elapse after operation without any trouble arising.

Dr. LAWRENCE, Wolfville, N.S., said he used a 50 per cent. solution of sulphuric acid in removing foul pulps. He took a cedar-wood plug for canal, and after dipping it in carbolic acid and creosote, drove it home.

Dr. BAGNALL, Charlottetown, used cotton and chloro-percha in nearly all his cases. The canal filled better with a shredded piece of cotton to carry the chloro-percha up. In his hands this method was very satisfactory.

Dr. MCAVENNEY, St. John, used cotton and iodoform in a tooth once, and it lasted there in good condition for eighteen years.

Dr. HOOD, Beverly, Mass., said it was his own experience that filling root-canals with chloro-percha did not make a tight plug, but with a gutta-percha plug it did.

Dr. ROBERTSON, St. John, found a root recently with only a film of chloro-percha in it, not by any means a tight plug.

Dr. BARBOUR, in closing the discussion, said he used his treatment in any tooth, attempting every case as it came along, with no discrimination as to avoiding mechanical treatment. The number of successful cases he had, had been over fifty. He then answered very interestingly a number of questions.

INTERNATIONAL DENTAL CONGRESS, PARIS.

The closing meeting of the Congress took place on Tuesday, August 14th, at the Palais des Congrès, at 1.30, when the following business was transacted:

Reading of the report of the Commission on Requests and Resolutions.

Report of the General Secretary.

Report of the Treasurer.

Discussion of the Report.

Address of the President.

Nomination of the Executive Committee of the Permanent International Federation.

Decision as to the place and date of the next Congress.

Dissolution of the Congress.

The following resolutions adopted by the Commission on Resolutions were laid before the meeting :

(1) That there shall be established, as far as possible, a unique method of culture for the study of various microbes.

(2) That the manufacturers should consider to a greater extent the wishes of dental societies as regards the color of rubbers, the natural shapes of teeth, the composition of alloys, and the manufacture of other articles.

(3) That the words "cohesive gold" be substituted for "adhesive gold," as being more exact.

(4) That the dental diploma be not obtainable before the age of 21 years.

(5) The best means of combating charlatanism consists in educating the public by popularizing dentistry and dental hygiene by means of the dental societies, the journals, and the schools.

(6) That professional integrity be assured by a written undertaking made on entering the schools and professional societies to practise honorably, *i.e.*, to refrain from all advertisement and all action contrary to professional dignity.

(7) That the preliminary instruction necessary to the dental student, before his entry into the dental schools, comprise :

A course of literary education, with knowledge of two living languages (English, French, or German).

A course of scientific instruction.

A course of manual instruction.

(8) That the length of time to be occupied in study in the dental schools be four years for dentists.

(9) That the length of time occupied by doctors of medicine in the study of dentistry in the dental schools be at least two years.

(10) That the project for a national federation of dental schools, brought forward by Mr. Spaulding, be forwarded to the International Commission on Education.

(11) That there be instituted an International Dental Federation.

(12) That the national committees formed in relation to the Congress continue to exist, and constitute the International Dental Federation.

(13) That there be named, at the final meeting of the Congress, a commission of seven or nine members to examine the conditions

of the constitution of the International Dental Federation, to propose their adoption by the national committees, and to prepare the next International Dental Congress.

(14) That the International Dental Federation be composed of all the national committees, represented by an Executive Council.

The first Executive Council, comprising seven or nine members, be named by the members of the Third International Dental Congress at the final general meeting of Tuesday, August 14th, and its powers expire at the opening of the Fourth International Dental Congress, which it is empowered to organize.

The Executive Council to name, at its first meeting, the commission on teaching.

This first meeting to be held on Wednesday, August 15th, at 9.30 a.m., at the Ecole Dentaire de Paris.

(15) That the Fourth International Dental Congress take place in not less than five years' time in the country which shall appear the most suitable to the Executive Council, after a choice among the invitations sent by the various national committees and by agreement with them. In any case the decision shall be made, at the latest, in 1903.

(16) That an International Commission on teaching be constituted, empowered to draw up a statement of the theoretical and practical knowledge necessary to the dentist.

This Commission to be named by the Executive Council.

(17) That an inspection be made, every six months at least, of the teeth of school children, and that the treatment of teeth requiring attention be regularly carried out, these two services being entrusted to a dentist.

(18) That the principles of dental hygiene be set forth in the elementary schools by charts and notice-boards.

(19) That dental hygiene be included in the teaching of general hygiene.

(20) That in all cases where medical services are provided by the State, dental services by dentists be also provided.

(21) That the public dental appointments be only given to practitioners holding the State dental diploma.

(22) That the medical services of the army and navy comprise dentists, in the same way that it already comprises doctors, dispensers, etc.

No. 7 of the above resolutions was the subject of a heated discussion, in which Drs. Harlan and Brophy, of Chicago, joined.

Dr. HARLAN said: Mr. President, in order that this question may be thoroughly followed by those who do not understand French, I will explain it. We have adopted a number of resolutions, and have now come to one which relates to the entrance into dental colleges. That is as follows: That in order to enter a dental college the pupil should have received a literary education

and in addition should be acquainted with two living languages. He should also have received scientific instruction and a course in manual training. It has been proposed at the end of this, as in opposition to it, that the medical education should be given only by faculties of medicine, and that this should be considered the preliminary for admission to a dental school, as the dental school teaches nothing but the technical part. In the United States and in England, as well as in some other countries, the medical and technical instructions go on at the same time, and the diplomas are totally different. The proposition now made is that every dentist should be a doctor of medicine first and a dentist afterwards. Gentlemen, this is a Dental Congress, this is an assemblage of dentists from all over the world, and they constitute the mouthpiece of the profession in the civilized world. To-day they are adopting something for the future, and it concerns us nothing what has been done in the past. This is looking forward to something which will be an elevation for dental education throughout the world, and the assumption that a man must first of all take a course in medicine to allow him to become a pupil in a dental school is one which is based upon a false premise, because the medical education which is given in a dental school is equivalent to that which is given in any medical school. I wish to say to my *confrères* from foreign countries that we should be stultifying ourselves by adopting that, because it is the old question again. We are here to adopt rules and regulations that will lead us to a continuation of Dental Congresses, independent and separate from every other kind of congress. I ask you, when this question is to be voted upon, to vote it down.

A very excited discussion in French followed.

Dr. BROPHY: *Mr. President, Ladies and Gentlemen*,—While I have not been able to understand the discussion in French, I have gathered from those who are able to understand it that the amendment to the resolution here offered is that the medical education be given by the faculties of medicine, and considered as preliminary to admission to dental schools. Mr. President, we have in this Congress gentlemen who have not had opportunities in dental schools, and yet some of the most valuable contributions to the literature of our profession, in the anatomy, physiology, chemistry, materia medica, therapeutics, and all the collateral sciences, have been presented and stand to-day as part of the literature of our profession. I and some of my colleagues from America have had experience in exactly this kind of work. In the early history of the institution with which we are connected in Chicago, the plan was to accept only graduates in medicine, and after giving them a course of instruction extending over a period of two years in the special lines to qualify them to practise dentistry, we found that such a course of instruction was a failure. It was a failure

because, in the first place, we could not in that length of time get the men to acquire that delicate manipulation so essential to success in the practice of dentistry. We have passed through this experience under the most favorable possible conditions, and we were finally obliged to abandon it, and accept the course of instruction that is now pursued. Why should we, this great profession, including in this great Congress nearly 1,200 representatives from all parts of the world, ask others who have no knowledge of the essentials of dental practice to do something to prepare us to enter upon a course of instruction of three or four years, as the resolution states? With equal propriety, it seems to me, the gentleman might insist that we should take up a course in technology—broad technology. Again, I think my friend who offered this resolution forgets that chemistry is not medicine, anatomy is not medicine, physiology is not medicine, but they all go to make up the great science which has to do with the treatment of the ills of mankind. And is there any body of men, or is there any body of people in this world, who have more to do with the alleviation of human suffering, based upon scientific principles, than those gathered here to-day? And have we not, in our great institutions of learning, evolved from fifty years' experience in teaching by such men in our own country as Taft, as Freeman, and others of their character, a course to be pursued that will be satisfactory and sufficient to train our students in the lines which they are expected to follow? I may state to those present that no less distinguished a teacher in our profession than Jonathan Taft made the statement to me only a few years ago that a greater success would be attained in the teaching of the students in the University of Michigan if all those branches—anatomy, physiology, chemistry, materia medica, bacteriology, therapeutics, and morbid anatomy—were taken absolutely out of the school of medicine, and taught only in the dental school for the dental students. Mr. President, I have already taken too much time, but I trust that this amendment to the resolution which I have read will be voted down, and that we shall not be an appendix to anything, but be a body and a profession to ourselves.

This speech gave rise to no little excitement, and a scene of considerable confusion followed, during which the President vainly endeavored to maintain order.

Professor GABRIEL finally entered and delivered the closing address to the Congress, for which he was duly thanked.

TORONTO DENTAL SOCIETY.

The Toronto Dental Society extends a hearty invitation to all dentists outside Toronto, and especially to Buffalo dentists, to become its guests at the two days' clinic, to be held on Monday

and Tuesday, 25th and 26th February, in the building of the Royal College of Dental Surgeons.

It would also be glad to have all attend the annual banquet of the society on Monday evening, February 25th.

Dr. T. W. Brophy, of Chicago, will present and demonstrate "The Surgical Treatment of Cleft Palates," and will probably perform the operation.

Dr. W. A. Price, of Cleveland, will present "The Use of the Roentgen Ray in Dentistry," illustrated.

Dr. S. Moyer, of Galt, will give a paper on "Preparation of Cavities."

Dr. Snow, of Buffalo, and Dr. W. V. B. Ames, of Chicago, will probably be on the programme.

A full complement of clinics will be given in addition to this programme, and it is expected that the event will prove an invaluable one.

Toronto dentists who are not members of the society and wish to attend the clinic, should see the Secretary.

W. G. L. SPAULDING,

Secretary.

"A," Yonge Street Arcade, Toronto.

INSTITUTE OF DENTAL PEDAGOGICS.

The Institute of Dental Pedagogics held its eighth annual meeting in the Maxwell House, Nashville, Tenn., Thursday, Friday and Saturday, December 27th, 28th and 29th. The attendance was good, a greater number of colleges than usual being represented. An excellent programme was carefully carried out, for which the Executive Board received the thanks of the institute. The comfort and pleasure of the meeting was very largely due to the untiring efforts of such men as Morgan, Gray, Noel, Dale, White and others. On Friday afternoon about a hundred of the members and their friends went out of town some miles to visit a real Southern barbecue. It is a novel sight for the Northerner to see meat cooked *en masse* over hot coals in the open air, while natives, whose appearances are not too attractive, act as cooks. A dark liquid called seasoning was applied to the meat while cooking, with a rag tied to a long stick. Although the process of preparing the meal was not very appetizing it did not seem to prevent anyone from enjoying his share of it.

At the closing session the election of officers resulted as follows: President, Dr. Geo. E. Hunt, Indiana Dental College, Indianapolis, Ind.; Vice-President, Dr. Hart J. Goslee, of the Chicago College of Dental Surgery; Secretary and Treasurer, Dr. H. B. Tileston, of the Louisville College of Dental Surgery, Louis-

ville, Ky. Dr. W. H. Whitslar, Cleveland, Ohio, was elected a member of the Executive Committee for a term of three years.

The Eastern colleges not being very largely represented it was decided to hold the next meeting where it would be likely to draw a larger delegation from that quarter, Pittsburg, Ann Arbor, Buffalo and Toronto were mentioned. We can assure the institute a hearty welcome from the profession of Canada if the Executive Board should decide to hold the next annual meeting in Toronto.

Selections.

PORCELAIN AS A BENEFICIAL ART IN DENTISTRY.*

BY F. J. CAPON, D.D.S., M.D.S., TORONTO, ONT.

"The true work of art," says Michael Angelo, "is but a shadow of the divine perfection."

"The art of an age or nation," writes another, "is the efflorescence of its whole spiritual life and endeavor." The art of a people is therefore only the embodiment of its prevailing ideas, affections, and conceptions in architecture, in sculpture, and on the glowing canvas.

Thus a dentist may be skilled in mechanism but still lack the innate art which is required to produce nature's conceptions. A porcelain worker requires at least a percentage of this innate art. Unless he is born with faculties that he can cultivate, and which will enable him to become proficient; unless he is born with talents that will develop a fine artistic and mechanical skill, he will never be an expert in porcelain work, though his manual training may be the best the office or college can give; he must have a base to build it on, and that he gets at his birth.

Porcelain was introduced into dentistry about the beginning of the present century. The attempts made were but poor as to form and color, representing the natural organs very imperfectly. Little improvement was made until Dr. Wildman, of Philadelphia, in 1838, produced such results in life-like appearance as had not been obtained before. Thus the progress which has been made in porcelain is credited to the profession of this country, the cradle of all modern dentistry. The introduction of porcelain into dentistry gives a widespread field of art and of manipulation, varying in application yet dovetailing into each other, making it necessary for a student to acquaint himself with the underlying principles of art as well as to have a knowledge of the manufacture of bodies and

* Read before the Dental Society of the State of New York, May 9th, 1900.

enamels, with the modes of vitrifying them, whether by gas, electricity, oil, or coke.

Much has been said of late as to the merits of high and low-grade bodies ; possibly they would be more properly classified as high, medium, and low. The true high-grade is termed block body, which is used by the manufacturers to produce the gum blocks and all artificial teeth, which are the nearest production we have to the natural appearance. Thus as we vary in grade from the block bodies we lose the transparent life-like appearance.

The medium are the bodies put on the market as high-grade. They work fairly well in producing shade, contour, and strength.

The low body, as found on the market, should hardly be classified as a body, as it is composed of such a large proportion of glass as to render it useless for high-grade work in the furnace, and as a substitute is a failure, producing poor results, which discourage the beginner, "porcelain" being set aside in disrepute and the attempts dubbed as failures, when an expert could have done but little better with the same materials.

I do not wish to appear presumptuous in classifying the bodies ; perhaps it is a matter of personal experience ; but I have bought the different bodies, good, bad, and indifferent, as they were put on the market, until I have "bodies to burn," nevertheless I find that I always set aside the lower and return to the higher. The question of the grades of bodies has been thoroughly thrashed ; it has come up from time to time in convention, and can only be settled to the satisfaction of each by his trying for himself.

I have seen many dentists fusing the porcelain body by the watch, which explains many failures. This rather amuses the expert, as porcelain, like dough, can be overbaked. It should be governed by the eye, as the different conditions, if only slight, would change the time of fusing. The pressure of the gas is not always uniform, and thus the fusing-point in the furnace varies. The size of the piece being fused must also be taken into consideration, especially if electricity is employed.

The furnace is a matter of mere choice, as a high-class one should be able to bake the higher-grade bodies as well as the lower, and *vice versa*, it being only a matter of degrees of heat. I mention gas, electric, and oil as the furnaces to choose from ; having each in my laboratory, I can speak with more assurance as to their merits. Although the old coke furnace has done and does do its work, it has become obsolete for minor operations ; besides, it makes the climate too hot for the "white man." Of the three furnaces mentioned, personally I could best dispense with the electric, although it is the one I should advise a beginner to obtain, as having the advantage to him of being sure in fusing without gassing ; besides, it is clean and noiseless, and throws out little heat. Its principal objection is the loss of time in fusing and the liability of the wires burning out, which are not quickly or easily repaired.

The oil furnace is a novel invention of Dr. Land, of Detroit. It is designed more particularly to fuse the larger pieces, such as continuous-gum work, giving reliable and perfect results, as will be seen by these samples. For those who are not acquainted with it, the diagram will show the scientific manner by which the inventor produced such a tremendous heat by a simple method—the natural draft of a flue.

The concentration of heat, as seen in the common blow-pipe, is brought to a point of focus by injecting a jet of air into or through the body of the flame. It is a fact with the blow-pipe, that the air passing through the flame becomes superheated as it travels on its course, and thus reaches its highest ignition at the point of focus, which is exceedingly sensitive, and slight variation in air pressure alters the degree of temperature; that is why it is so difficult to become an expert in the use of the mouth blow-pipe.

Fig. 1 on the diagram represents the general appearance of the combustion chamber, which is expanded at the bottom and converged at the top, and shows it connecting with a second chamber.

The combustion in the chamber is perfect, which renders it safe from gassing. My muffle more frequently than not has huge cracks in it without any effect on the work, as you see by the samples that the shades are retained and brought out perfectly.

To illustrate the sensitiveness of the oil flame in practice, I find that a furnace of the capacity as shown in Fig. 2, when two hundred and

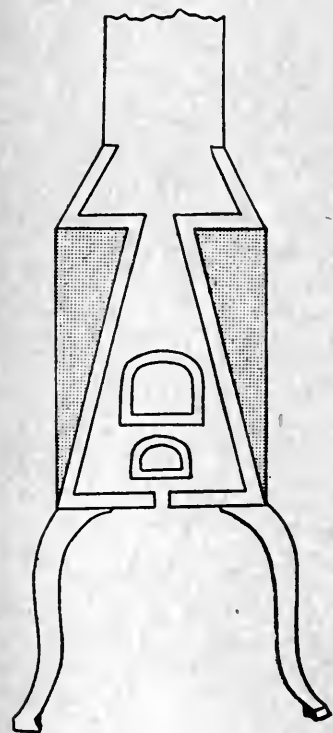


FIG. 1.

ten drops to the minute maintains a muffle $8 \times 3 \times 2\frac{1}{2}$ at a temperature of 2600° F., that an addition of thirty drops will bring it into exact focus and augment the heat 600 to 700 degrees, and, on the contrary, thirty drops less than the two hundred and ten will lower the temperature 300 or 400 degrees less than the standard of 2600° F.; or if an additional thirty drops should be supplied, making the total two hundred and seventy drops to the minute, this would also lower the temperature. From this it will be seen that a flame may be out of focus either from want of fuel or from excess of fuel, and that in either instance the temperature falls; and that

an exact focus in a combustion chamber is equal in importance to that of a blow-pipe in giving the highest degree of heat.

The gas furnace in my laboratory is also one of Dr. Land's, Midget size, which has been in daily use since 1890 without change or repair, and bids well to be so another decade. It contains a

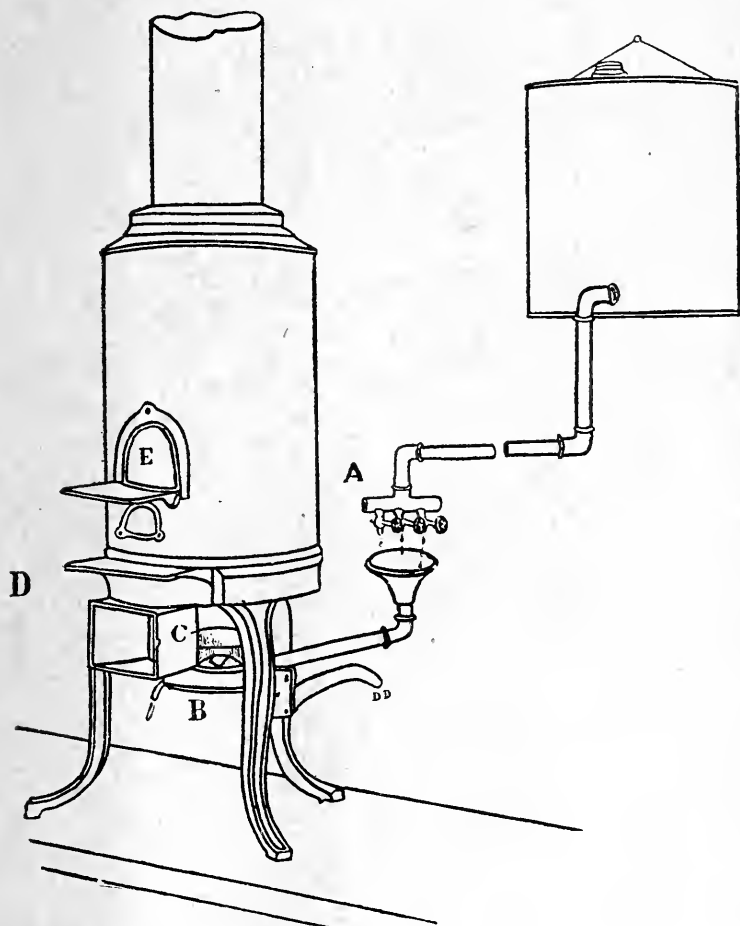


FIG. 2.

seamless iridium muffle, which has given perfect satisfaction ; whereas if the thinner platinum ones are used one is in constant trouble from either burning through or gassing. Yet if there is perfect combustion of the gas and air mixture there is little chance of gassing ; a practiced eye and ear will at once determine the fact of perfect combustion following the lighting after the turning on

of the air-pressure pump. The heat will be up and porcelain fused in less than three minutes. This class of furnace may have an objection in the noise that accompanies it ; therefore its place is in the laboratory, although it is very entertaining to patients, who often ask to be shown the *modus operandi*.

In summing up : Any furnace will be satisfactory, be it electric or gas, oil or coke, if the operator becomes acquainted with it before he throws it out in disgust. To me the furnace is a part of the laboratory just as much as the vulcanizer ; and if I could carry my wish I would take it in preference, for what class of artificial dentures compares in the great majority of cases to continuous-gum ? It gives the artistic operator a chance to display his knowledge of art in the reproduction of nature in both the teeth and the gums.

Modern artificial dentures consist largely of vulcanite, which in itself is invaluable to us as dentists. Yet to such an extent has vulcanite, by reason of its cheapness and ease of working, superseded other materials demanding greater skill and art in their manipulation, as to have retarded the higher developments of prosthetic dentistry and done much to divest our vocation of the dignity which belongs to a profession. Continuous-gum dentures are not only the most artistic, but are the most cleanly of all artificial dentures. The base, composed of pure platinum, is entirely uninfluenced by ordinary chemical agencies ; its purity is the personification of cleanliness. There are no interstices in which food débris or secretions may find lodgment and become offensive through subsequent decomposition. Worn for many years, the piece when scrubbed is practically as clean as when it came from the furnace.

The artistic part of these dentures is brought out by the operator who is able to give any configuration to the body, and restore to a degree limited only by his skill and art any loss of gum and palatal contours. When the palatal aspect of the piece is exposed, its artificiality is not noticed, as when dentures are constructed upon other bases.

The most important use of porcelain and the furnace in the dental laboratory is in the art of crown-work. It is a well-known fact that an imitation always suffers by contrast with the original. This, I am forced to say, is too often what happens in replacing artificial crowns. Too many operators there are, endowed with only a fair amount of mechanical skill, who by continued practice are able to place upon a root an apology for a crown, which, as the Dutchman would say, is " good for strong," but that is all the credit due to it. There is no reason in my mind why, when replacing a crown, one cannot conform more closely to the unison of nature, combining practical utility with the esthetic. An anatomical crown or cap is not even aspired to by many, they being satisfied to cover the root, say of a molar, with gold without pretence to

contour to the adjacent teeth, leaving a condition that is a nuisance to the wearer.

Porcelain comes to the rescue as an ideal method of replacement of the lost crowns of teeth in conspicuous places. It having the required strength, the operator can restore the desired effect according to his ability as an artist.

The advantage of porcelain crowns (made by an operator) over those of gold, or even those combined with gold and porcelain, is obvious. Take, for instance, the ordinary every-day post-crown. After the face of the root has been trimmed to the proper shape, an iridium post is fitted into the enlarged canal, the depth of the canal marked on the post, and a disk of pure soft platinum, No. 35, slightly larger than the face of the root, is punched in the centre, the post forced through to the mark, and soldered with pure gold. This is inserted into the root-canal, and the disk burnished and trimmed and burnished again, leaving a margin on the palatine half to form a band. Now, this absolutely fits the face of the root, which is next to an impossibility with a make-up porcelain crown, such as the Logan, etc. And I also claim that a porcelain crown made in this way has an advantage over similarly constructed crowns made with gold backing, in that one is able to more closely imitate nature in shade, position and shape. How difficult to make a natural lapping incisor with a gold backing! Then, again, the shade is often disappointing, as the backing makes it a matter of speculation. But with a porcelain crown the shade can be changed by the aid of mineral paints and burnt in, thus bringing about an exact shade, sometimes impossible to get in a ready-made facing. Time is a consideration to most of us, as time saved is money to the dentist; and, after all, this is what we are after. So time is saved in making your own porcelain crown, as one can be made in less time than it takes to go down town to get one of the Logan's.

I must speak for the strength of the porcelain crowns, as I think it is an erroneous impression that they are delicate and need protection. I have watched them take the strain of mastication for many years. It seems to me they are stronger than the porcelain facing with gold backing. In the one case the facing is etched to the solid porcelain body of the tooth, practically making the facing and body one; whereas in the other the facing is relying on two little pins, which in soldering are very frequently invisibly checked around their heads, and are liable to be easily forced off if not protected by unsightly gold tips, which are by no means artistic.

Perhaps one of the most satisfactory porcelain crowns is that we call the "jacket" crown. It is especially adapted to broken-down incisors and bicuspid where the pulp is intact, and most especially in covering the "peg-shaped" laterals. These "jackets" have proved to be very durable crowns, and have the advantage of

enabling one in case of death of the pulp to enter the pulp-chamber without removing or injuring the crown. The record of this crown has, in the past twelve years of my practice, won for it a place that no other single crown can occupy. It has come to my rescue in roots fractured far under the gum (broken by hockey, lacrosse, and football); roots badly decayed and under the gum, and most particularly has it been my friend in the wholesale crowning of teeth where it is necessary for the salvation of the pulps. The samples I have passed around will show this form of crown. I will not burden you with the technique of this crown, as it has been in print many times.

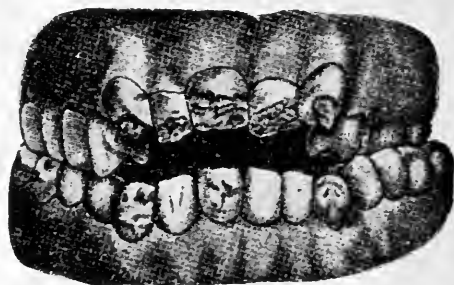


FIG. 3.

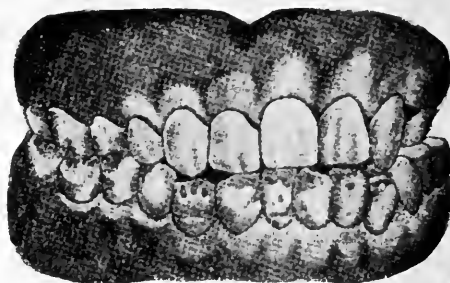


FIG. 4.

I have many cases of this wholesale crowning system, models of which would no doubt interest you, but have made diagrams of only two cases, which have been of long standing, and of which, as I have seen them recently, I can give an excellent report.

Fig. 3 represents the case of a young lady at the age of nineteen, who came to me in 1891 from a neighboring city. The upper centrals, cuspids, and right lateral were very badly pitted and out of position. The left lateral was lost by extraction some years previous. The upper incisors and alveolar process protruded so much that the patient could only close her lips by forcing them, the space from non-occlusion causing a very decided lisp in the

speech. The first bicuspid were removed ; the arch was spread sufficiently to properly occlude the molars and the remaining bicuspid on the left side, and this was followed by slight but constant pressure on the cuspids and incisors, thus closing the space made by extraction, also reducing the protrusion, bringing the upper and lower nearer a cutting surface. After obtaining these results a retainer was used for a time to insure position, after which the teeth were prepared and covered with porcelain jackets, as in Fig. 4. The remarkable feature of this case, is that devitalization was not resorted to except in the right central, which was more prominent than the others, thus requiring more trimming to make the arch a uniform contour.

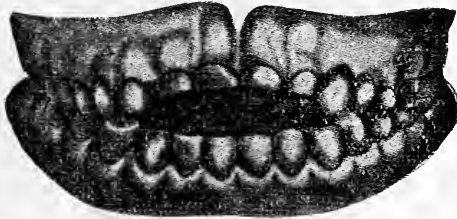


FIG. 5.

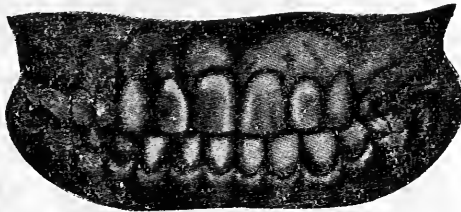


FIG. 6.

A younger sister of this patient had similar defective teeth, which were covered with jackets about the same time, saving all the pulps. The teeth, being hypersensitive, were ground down under an anesthetic. Both these patients were seen last summer ; no pulps have died, and everything was doing and looked splendidly.

Fig. 5 shows a case of extensive erosion. Patient in excellent health, but suffered from gradual loss of tooth-structure. This commenced five years prior to the operation, which was in April of 1891. Biting and mastication were difficult and painful from the close proximity of the pulp to the surface. The jacket crown was again used in this case with excellent results, as shown by Fig. 6.

I think you will agree with me that a short bite bicuspid crown is a very difficult one to handle. It requires to be strong enough to resist the force of mastication, as well as have an artistic appearance.

The ready-made porcelain crown, such as the Logan, Bonwill, Gates, etc., are all weakened by dowel-heads or holes, which are placed in the weakest part of the crown. The natural bicuspid is prone to fracture more than any other tooth, by reason of a deep sulcus and a long interlocking cusp; such teeth when filled are weakened, and more liable to fracture.

The jacket crown meets a great number of these cases, but where the root is a fairly good one, and the pulp not intact, I consider a crown I call the "cup" crown the most powerful, and yet it has an artistic appearance. Fig. 7, *a, b, c, d, e*, will give an idea of it. It is a collar crown, with or without a dowel, but having the band sufficiently wide to form a cup for the porcelain, which gives additional strength to the crown and does not take from it any artistic effect in imitating the natural one.

A great many porcelain workers in making a crown connect the pins of the invested facing with solder to the dowel or some

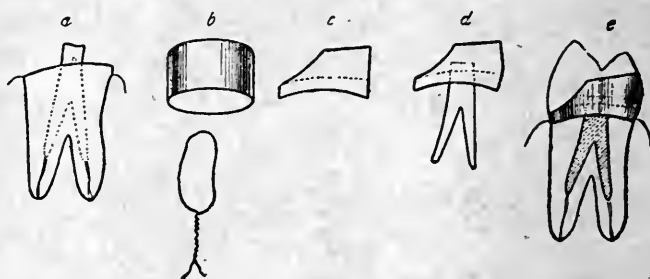


FIG. 7.

other part. This to me is entirely unnecessary, and I cannot see the object of doing it. In fact, the pins are a detriment, as a facing with pins will fracture (with the shrinkage of the body or in the heating or cooling) just across the pins. Veneer facings are manufactured for this work, which save time and the trouble of having to entirely grind out the pins to form a proper veneer, and which seldom give trouble in checking. Again, many operators seem to be afraid of grinding the labial surfaces of crowns for fear of destroying the lustrous surface of the facing. That is just what I often like to do; I grind and mutilate (so to speak) until I have obtained the desired shape. It is then made smooth with fine sandpaper and put on a buff of cotton batting, using pumice first, then whiting, which brings a gloss more in keeping with the adjoining natural teeth. If the highest grade bodies are used the gloss can be reproduced by subjecting to high heat in the furnace, but where the medium or low-grade bodies are used you would destroy the contour of the crown before the gloss could be obtained,

as all vitreous masses under high heat take the spherical form. The color would also be gone, and appear like translucent glass.

The use of porcelain for inlays seems recently to be attracting unusual interest in the profession. For the past eleven years I have been working and experimenting with this branch of porcelain art, keeping a close record of successes and failures—I am sorry to say too many of the latter, for nothing would please me more than to find that the “ideal” was porcelain. I have listened to essayists pouring forth the virtues of porcelain, placing it on a pinnacle as the ideal filling, “giving infallible results, and absolutely perfect in every detail.” I have listened to and have read their sweeping testimonials in favor of porcelain inlays, and felt that they were doing an injustice to their patients, to themselves, to their listeners, and to the system of inlaying. Two or three years’ experience may make a man satisfied with himself as an expert, but it does not make porcelain the ideal filling until it meets all the requirements of a true standard and the universal confirmation of the profession.

I do not wish to give an unfavorable impression of porcelain inlays, for they have a place, but the instances of their use are fewer in my practice than ten years ago. The failures attending this class of porcelain work are not due to the filling itself, as porcelain has a great many of the requirements of an “ideal” filling. It has the possibility of shading. It can restore the contour. The texture is sufficiently strong. It is easy of manipulation. It does not disintegrate or change in form by saliva. It is a poor conductor of heat or cold. It fills the bill for nervous patients and invalids, where the working of gold is next to impossible. It is particularly adapted for soft teeth where another dentist has failed with gold, and you come to the rescue with porcelain. If you follow in the footsteps of your neighbor you also may fail, as he may be just as good a gold operator as yourself; but, in the fact that you have done something different which also pleases the eye, and have caused but little or no discomfort, with the chances of as good success, for “a good porcelain inlay is eminently better than a poor gold filling,” you have accomplished at least one thing that counts in your practice—you have pleased the patient.

After this plea for porcelain inlay, wherein lies its weakness? It is in the material which connects the porcelain to the tooth; the “cements” are at fault. I was pleased to see the subject of cements brought up before the National Dental Association last August in a paper read by Dr. Wedelstaedt, in which he showed by demonstrations and his investigations that the cements for which we pay large prices are a miserable failure for their intended purpose. This is a subject that requires attention both by the manufacturers and the scientific workers along this line.

Our amalgam work in the mouth was in a similar state, our

failures staring us in the face every day—we gullible dentists paying handsome prices for alloys giving no better, if as good, results as the “homespun,” of forty years ago. We must thank such scientific men as Dr. Black for their persistent efforts, as in his experiments and agitation, for the improved alloy to be had to-day.

True enough, cements under different environments and conditions give different results. I have seen large cement fillings on the morsal surfaces of molars doing service for fifteen or twenty years without a perceptible disintegration, and seemingly as hard as flint. If we could rely on this kind of results in all mouths, the porcelain inlay would be the Mecca of fillings in conspicuous places, as you can get nearer the shading, transparency, and density of the tooth than with any other material. The consistence of cements in mixing has no doubt a great deal to do with the durability. Thus of late I have been tempted to leave my old reliable, “Justi” cement for inlays, because of its quick setting; whereas in using the Harvard the mixture can be given more body by a greater amount of powder, and the inlay can be pushed into its place without the granulation forming before the inlay is home, as very often happens with a quick-setting cement, when it is most annoying to be compelled to remove the inlay, scrape and wash out every particle of the cement, and try again.

With no better cements than we have I shall continue to put in porcelain inlays, because there are many who demand it, even if they are liable to require replacing in three, four, or five years. It has gained for me a reputation which I have to sustain, and those inlays which give way from time to time will no doubt be replaced in porcelain if in conspicuous places; but my experience has taught me *discrimination*, which should be a password to those ardent in first love.

“Permanent filling” is a definition in itself, and I am quite certain that we cannot as yet put porcelain inlays in that class, as they are limited by the success of the cement, which is itself classed as temporary.

In reviewing my record books on inlay work as food for this paper, I find the cavities on the labial surfaces of the incisors and cuspids, and also those at the gum-margin, are in the best state of preservation. The cements in the majority of cases have dissolved out more or less, but this does not seem detrimental to the tooth. In approximal cavities where the joint is at the gum-margin, the cements dissolve more rapidly, and recurrence of decay is sure to follow. The best results of any inlay are found in those which were done by the “How” system of trephining a cavity, and grinding the inlay in revolving motion. But this inlay, which is absolutely perfect as inlays go, has allowed the cement to dissolve out, and in some cases a slight dark line is shown by the infiltration of the saliva.

I have corners, contours, tips, and cusps in all stages ; some doing only fairly well, others better—depending entirely, of course, on the action of the saliva on the cements. I must say, however, after seeing some of the inlays that were put in eight and ten years ago still preserving the tooth and looking well, it is encouraging enough to continue the inlay process where properly indicated, in hopes of an insoluble cement being discovered. At any rate, it is well that one should be up-to-date and able to cope with the different requirements of the public, satisfying himself that his efforts are equal to the position he holds in the mind of the patient, whose interest should be paramount to every other consideration, and who should be given accurate information as to the applicability of the porcelain to his case in respect to appearance and durability as compared with gold and other fillings.

Will it last as long as gold? This question is invariably asked, and is a sticker when the cavity indicates porcelain and you have made a plea for it, your inclination at the same time being toward gold as the paragon filling for durability.

Some weeks ago I received a telegram from a lady (residing in a city in this state) asking an appointment to have replaced a large contour of porcelain which I had made some five or six years ago. On examination I found the enamel of the tooth badly broken, which made it necessary to remove the porcelain piece. Many questions were asked and answered as to the "pro" and "con" of porcelain and the relative merit of gold, the matter finally ending in the contour being made in platinum and gold as being the kind to meet the requirements to the satisfaction of both dentist and patient. It was most difficult to retain a porcelain filling in position, the large contour, on the mesial side of a central, having little or no depth to it, the pulp being intact. The lymphatic temperament of the patient gave a square occlusion to upper and lower incisors, which consequently had worn to a broad biting surface. There was also an approximal cavity on the distal surface, but not conspicuous. The porcelain was made for the mesial cavity. A groove was made in the remaining cutting-edge, and a thread-like platinum wire, baked into the inlay, ran along the floor of the cavity or groove on the cutting-edge and into the distal cavity, being built over with gold, and the cutting-edge shod to protect biting off the porcelain as well as the tooth.

The method I employ is to use a platinum matrix and high-grade bodies, but the system has been explained in detail so often that no misstep could be taken by a beginner if he tried. The samples that you have in hand will show a few inlays made from different makes of bodies. I did not pretend to match in color the bleached tooth, but the jointing will compare favorably with what is found in the mouth. And those joints will allow the cements to dissolve, which gives to an inlay a limit of durability governed by the action of the saliva in the different mouths.

It seems to me there is only one way to get a proper matrix for an inlay ; that is to burnish the metal, be it platinum or gold, into the cavity, which should have some depth, and not to apply merely a thin veneer, as some suggest. I see no advantage in trying to take a "perfect" impression of the cavity, whereby the matrix is made out of the mouth ; it is a great loss of time. What better does one want than the tooth itself, with the true, hard edges of the cavity to form the matrix against ? You have gained nothing in going about trying to procure a duplicate of a cavity you already have at hand. One soon learns to remove a matrix without changing its form. One thing is certain, if there isn't space to get the matrix out freely you cannot get the inlay in when made. Some workers in porcelain inlays advocate the filling of all undercuts with oxyphosphate, waiting until it hardens, and then make the cavity so the matrix can be got out very easily. In my working I have always relied on perfecting the edges of the matrix after having made a biscuit, which strengthens the matrix and allows it to be held and the edges burnished perfectly. In large contours I rather prefer to have an undercut at the gum-margin, as it gives body to the filling, and everything helps as a retainer. With a little practice one is able to get the matrix down into a groove. With a platinum matrix it matters little if the metal should break through while burnishing, as the porcelain will bridge over the break and the inlay finish just as perfectly. It is sometimes necessary to retain a small corner on an incisor by forming a groove at the base of the cavity, and a staple of platinum wire is pushed through the bottom of the matrix and held in position with a little dampened body, and the whole withdrawn from the cavity and baked. If something of this kind is not done the corner is liable to be dislodged with a very slight strain.

It is quite common, as a saving of time, to make the inlay with one burnishing, the patient being dismissed and the inlay made in his absence at the leisure of the operator, who would require an excellent memory to remember the details of a contour, as so often the matrix does not indicate the shape of the lost part of the tooth, and only by trying into the cavity can one obtain the exactness that is necessary to get the required result.

Although the uses of porcelain and the furnace do not stop here by any means, I feel that I must do so, before completely exhausting those who have been good enough to listen to my feeble attempts.—*Dental Cosmos*.

Dominion Dental Journal

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DR. W. GEORGE BEERS

DIED AT HIS RESIDENCE

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DECEMBER 26TH, 1900.

SCHOOL DENTISTRY.

In the November number of this journal is published a paper read before the International Congress, Paris, on the "Practice of School Dentistry in the Public and Poor Law Schools of Great Britain," by W. J. Fisk, L.D.S., Edinburgh, Hon. Secretary School Dentists Society. It would seem that the authorities of the different boys' schools have the pupils' teeth regularly examined by a dentist who is appointed for that purpose. In most cases an office with all the necessary equipment for dental operations is set apart for the dentist in the school building. In some cases the headmaster demands a certificate of exemption from dental troubles before entrance. In the poor schools and the naval training-ship the dentist gets a yearly salary. In one case \$2,000 a year is paid the dentist for one day each week. Does any such scheme of systematic inspection of school children's teeth exist in Canada? Are the teeth of the boys' and girls' boarding-schools of Canada systematically attended to? What arrangements are made by such schools as Upper Canada College, Port Hope School and all the girls' boarding-schools of Canada to have their pupils' teeth attended to? Perhaps some of our readers will publish the desired information that will show the dental world that we are not behind in this matter.

In the present issue of this JOURNAL appears a paper by Professor Limberg, of Russia, who describes fully the work done in the public schools of Russia. It would appear from the paper mentioned that Russia is far in advance of us in the matter of inspection of public school children's teeth. Yet we notice that in a paper by Richard Grady, of Baltimore, dentist to the U. S. Naval Academy, that a child in Toronto must have his teeth attended before he is admitted to the public school. There is great interest being taken at the present time in the subject of school dentistry. We are pleased to see that the investigations and statistics of Dr. J. G. Adams, of Toronto, are freely quoted from in papers on the subject both in Europe and America.

EXTRACTION AS A NECESSITY IN ORTHODONTIA.

If a tooth in the upper arch must be sacrificed, let it be either the first or second bicuspid. We cannot understand how those who have made a careful study of the occlusion of the teeth and know anything of their interdependence could ever advise the removal of the first molar, even though far advanced with caries,

for its loss could not benefit the crowded condition of the incisors, and would probably be followed by other forms of malocclusion even more serious; while the removal of a cuspid or lateral incisor, unless the root be malformed in such a manner as to make its adjustment impracticable, is, to our mind, no longer excusable even in a country physician.

INLOCKED TEETH.

In the treatment of inlocked teeth, with a view to obtaining a proper occlusion there is a strong tendency on the part of many to perpetuate a very "old foggy" notion in applying some form of gag to keep the jaws apart and prevent the occlusion from interfering with the movement of the teeth. Such practice should be obsolete. A good appliance will effect the movement regardless of the slight hindrance offered by occlusion, which is reduced to the minimum by the patient's natural tendency to avoid irritating the tender moving tooth.

Editorial Notes.

WOULD it not be a good idea to have the following motto framed and hung in such a position that a patient in the operating chair could read it, "Good Teeth, Good Health," and beneath this, in smaller type: "Without good teeth there cannot be thorough *mastication*. Without thorough mastication there cannot be perfect *digestion*. Without perfect digestion there cannot be perfect *assimilation*. Without proper assimilation there cannot be *nutrition*. Without nutrition there cannot be *health*. Without health, what is *life*? Hence the paramount importance of the teeth."

DON'T fail to read the prize essay on "The Care of the Teeth," in the October number of the *Cosmopolitan Magazine*. You will surely get some information that is not known to *modern* dentistry.

THE football enthusiasts of the Royal College of Dental Surgeons were pleased to see Dr. Sanderson, of Ottawa, in the game on the occasion of the Rough Riders visit to Toronto.

IF teeth are held firmly and not allowed to wiggle about while being regulated there will be no pain or soreness.

DR. W. J. HILL, of Alliston, spent a few days in Toronto in November.

DR. A. A. MCKENZIE, of Markham, has gone to Stratford to practise.

DR. BRACE, of Brockville, will spend the winter in the South.

Reviews

Crown and Bridge-Work. 6th edition. By DR. GEO. EVANS.

The last edition of Dr. Evans' book on "Crown and Bridge-Work" is a very useful and concisely written book. Of course, in a work of this kind, it would be almost impossible to describe every form and kind of crown, but there are a few good ideas which Dr. Evans has left out of his work which would be of no disadvantage to have put in, particularly do I refer to the form of crown which requires the root to be cut to a wedge shape, and the different modifications of this form. One other point in the work to which a great many dentists will take objection, is that Dr. Evans advocates pulp-capping. Now, without doubt, sometimes pulp-capping is successful; but pulp-capping, as Dr. Evans advises, is certainly risky, and to cover a doubtfully capped pulp by a crown, or engross it in a bridge, which is worse, would be considered by conservative Canadians as scarcely pardonable. The work, however, is teeming with useful information for dentists, particularly for graduates who have had some experience. The cuts are splendid, and in some cases speak volumes, one cut following another in such connected succession that words would be, to a practitioner, superfluous. A great deal of space is given to the different kinds of bridges, fixed and removable, and quite a space is devoted to porcelain work, which latter, being of modern institution, to a great extent requires a knowledge of modern methods, and displays Dr. Evans' power of assimilating other men's ideas and arranging them in a pleasing manner. This faculty enhances the work to such an extent that, even leaving the other good points of it out of the question, the chapter on porcelain is sufficient to insure it a welcome into every progressive dentist's library.

J. A. McDONOUGH.

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DOMINION DENTAL JOURNAL



WILLIAM GEORGE BEERS, D.D.S., L.D.S.

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WILLIAM GEORGE BEERS, D.D.S., L.D.S.

One of the stalwarts in dentistry has fallen. Dr. William George Beers died at his residence, 107 Metcalfe Street, Montreal, on December 26th, 1900, aged 57 years. The cause of his death was heart disease and with complications. He was born, May 5th, 1843, in the city of Montreal, and obtained his early education at Lower Canada college and Phillip's school, Montreal. His training for the profession of his choice was obtained in the office of Dr. Dickenson, of Montreal, after which Dr. Beers entered upon the practice of dentistry in his native city in 1865. In addition to the L.D.S. degree of the Province of Quebec he obtained the L.D.S. degree of the Province of Ontario in 1870, and subsequently the same degree in England. At the affiliation of the Dental College of the Province of Quebec with Bishops College, Montreal, the degree of D.D.S. was conferred upon him.

On November 27th, 1867, Dr. Beers was united in marriage with Mary Elizabeth Hope, of Kingston, Ont., who, with their two sons, Arthur Hope Beers, M.D., C.M., D.D.S., L.D.S., and James Crawford Beers, now mourns the loss of one of the most devoted of husbands and kindest of fathers. The death of their only daughter, six months previous to the death of Dr. Beers, was a sad blow which probably hastened his end.

Dr. Beers was a prime mover in the struggle for the advancement of the dental profession in the Province of Quebec in a legal and educational sense, and to his untiring and disinterested advocacy of an incorporated profession is largely due the high status of dentistry in that province. For many years he served on the Provincial Dental Board of Examiners as secretary and president at a time when this work was entirely a labor of love.

The difficulties of establishing a college were largely increased

by the necessity of having lectures given both in English and French. Dr. Beers was for several years a lecturer in the college, and the esteem in which he was held by his colleagues is evidenced by the fact that he held the position of Dean of the Faculty until he voluntarily severed his connection with the college. He was an honorary member of nearly all the provincial dental societies in Canada, and a corresponding member of several British and American societies. He was ever a forceful, fearless writer on dental subjects, and was widely known in dental circles not only in his own land but throughout the English speaking world, enjoying the personal friendship of such men as Sir John Tomes and Sir Edwin Saunders in England, as well as many of those who have moulded the thought of the profession in the United States during the last thirty years.

Dr. Beers' characteristic generosity is well illustrated by the mention of his donation a few years ago of his splendid dental library, consisting of over five hundred volumes, to the Dental College at Toronto.

The editorial pages of this Journal for the past twelve years, and also those of the *Canadian Journal of Dental Science* back in the seventies are the best samples of Dr. Beers' trenchant style and of his untiring zeal for the advancement of his profession. He never wearied berating the quack, and it is interesting to note, among other advanced ideas advocated years ago, that as far back as 1889 an appeal was made by him for a Dominion Dental Association, having for its aim the securing of reciprocity between the provinces in the matter of diplomas, a question that is just now engaging the thought of those interested in dental education throughout Canada, and which will in some form, we trust, become in the near future an accomplished fact.

The *Canadian Journal of Dental Science*, edited and published for several years by Dr. Beers, was the first attempt at dental journalism in Canada, and had a large circulation, not only in Canada but also in the adjoining Republic and in Great Britain.

When we view the life of Dr. Beers outside his profession we are amazed at the versability of his talents, and the many important movements he was enabled to inaugurate. He was above all else a patriot. At this hour when all hearts are bowed with sorrow for the death of our beloved Queen, Victoria the good, "of noble virtues and high renown," no Briton would have grieved more sincerely, had he been in life, than George Beers. "Here is a picture of the Queen, God bless her," he said, as he presented a coin to a poor child who had done him a service. Although a most amiable and peaceable man he was always ready to defend the honor of his Queen and country, not only in private life, but on the field of battle. During the Fenian raids of 1866 and 1870 Beers served at the front, being one of the original members of the

Victoria Rifles. He organized No. 6 Company, largely from the old Beaver Lacrosse Club. Passing through the ranks he retired with the rank of Captain in 1881, and subsequently became a member of the Victoria Rifles Reserve. He did not hesitate to express himself on any national question. In October, 1888, he delivered an address before the New York State Dental Society at Syracuse, in the course of which he castigated the people of the United States of America pretty strongly for its treatment of Canada. Some years ago when there was a movement among certain classes in Canada for annexation to the United States his pen was wielded vigorously in favor of British connection. "I would teach a boy," he said to the writer a few weeks before his death, "the Lord's Prayer first, and God Save the Queen next."

In the athletic field Beers was a prominent figure, and is known throughout Canada as "The father of lacrosse," Canada's national game. He saw it played by the Caughnawaga and St. Regis Indians, and saw in it a game well calculated to develop the youth of Canada. He formulated the first set of rules for the game which are practically the rules in use to-day. He also wrote the first book on the subject of lacrosse, a work which has not been surpassed by any writer since.

In 1876 he organized and captained a team of Canadian and Indian lacrosse players who visited England, Ireland and Scotland, and by special request played before the Queen, who presented each player with a photograph of herself bearing her autograph.

In 1883 a second lacrosse team toured Great Britain under his management. Dr. Beers was widely known to magazine readers as a writer on Canadian sports and pastimes, contributing series of articles to the leading American magazines, among others to Lippincott, Scribner and Century. He was the only life member of the Montreal Amateur Athletic Association, and the honorary life president of the Montreal Lacrosse Club. He was one of the founders of the Canadian National League.

At his funeral, which took place on December 28th, the members of the Montreal Athletic Association, Victoria Rifles Reserve, No. 6 Company of the Victoria Rifles, and the different Lacrosse and Snowshoe Clubs were in procession. To quote from a Montreal daily, "A well-known dentist, a fearless patriot, a famous athlete, an efficient militia officer and a much-respected citizen has passed away in the person of Dr. William George Beers."

G. S. M.

Original Communications

MANAGEMENT OF CHILDREN.*

BY H. E. EATON, D.D.S., L.D.S.

Notwithstanding the fact that men are merely children grown up, we frequently meet some who seem entirely to ignore their past and would have us believe they came into this world a mature, fully-grown being. They are altogether out of sympathy with child life. Looking upon a child as a being whose function is to disturb the peace of mankind, they simply have no use for them. While this may be one function of some children, there is another side to child-life, and if such men as Frederick Froeble, Louis Carroll, Francis Childs and a score of other great men could give their lives to the study of child-life, certainly we will not be taking anything from our dignity if we give the matter some consideration.

My object, of course, is to treat the subject from the dental standpoint, and I wish, first of all, to say that the successful management of the child in the dental office is only less important than the care of its teeth. A dentist becomes a public benefactor when he can so successfully manage the child that the fear and dread of dental operations is taken away, or not allowed to enter its mind, for even a single instance of fright or terror is something that has a lasting and harmful effect upon the child's mental development. The result from a professional standpoint is that operations can be more successfully performed, and the child's teeth more regularly attended to; and is not this one of the most important subjects before the profession to-day, viz., the care of children's teeth, for the bearing it has upon the future generations.

There is no one rule or plan that can be laid down for the management of children in the dental office, any more than in the home. Each disposition requires its own peculiar treatment. A method that would be ideal in one case, would be ruinous in another.

There are a few principles, however, that might be observed, and I would say, at the outset, that in order to achieve the greatest success in the management of the child, one should love children, and if you do not possess this love cultivate it. The average child is very quick to discern whether you have it or not. Having a natural love for children, it becomes comparatively easy to win their confidence, without which your every effort in working with the child will be marked by failure. The mistake is often made

* Read before Toronto Dental Society, January 15th, 1901.

by us in attempting to form an acquaintance and gain the confidence of a child, in that we speak from a grown-up standpoint instead of coming down to the child's level. The child at once pictures us in its mind as some awful dignified creature that does not belong to its world, and therefore communication is at once cut off. Rather study and follow out the lines of thought that would be most interesting to the child, and thus you meet on common ground. Don't think your time too valuable to spend a few moments in chatting with them. As a result of such conversations little girls have frequently brought their dolls, and boys their boats and other toys for my inspection, because I had exhibited an interest in these things during our conversations.

In placing a child, especially a nervous one, in the chair for the first time, I make it a point to draw the attention, as far as possible, from anything that suggests work upon the teeth, until that timid open-eyed watchfulness that expects every moment to see the Jack pop out of the box, passes off. If it can possibly be so arranged, do not have the mother accompany the child, for the mother is often harder to manage than the child. They are sure to say something like this: "Now, it won't hurt; you needn't be frightened, mother is right here;" and likely as not in the same breath tell of some awful experience they have had in the dental chair. Never suggest such a thing as hurt, to the child's mind unless it might be in a case of extraction where you know it will, when it is better to tell them it will hurt them some, but assuring them you will be as gentle as possible; but never tell them it won't hurt when you know it will, for in the majority of cases they have learned from the inconsistencies of their parents not to take too seriously what you say about it. I have heard of dentists concealing the forceps up their sleeve, and asking the child to just let them look at the tooth, they would slip the forceps on and extract the tooth. He only gets that chance once, when he has lost the confidence of the child and made it to fear and hate everything in connection with dentistry. It is supposed by some to be clever. It isn't. It is wicked, and should be condemned in the strongest terms.

Now we all know that in most children the imagination is developed to a wonderful degree. This can be turned to excellent account. I sometimes liken the chair to an elevator, and ask them if they would like to go up to the toy department, or as I elevate the chair I make allusion to the story of "Jack and the Beanstalk" which most children have had read to them, and they very much enjoy the "Hitch my toe and up I go." It is surprising how quickly they, through their well-developed imagination, enter into the spirit of it all. One step gained, viz., the fear of the place, and the fear of the dentist overcome, I proceed to examine and excavate the cavities. By this time I have become so far

acquainted with my little patient as to have discovered the direction of some strong inclination or pet theme, which, as I have already hinted, I follow out. For example, a little patient of mine I soon discovered was passionately fond of fairy stories, in fact she was so absorbed by them she seemed to live in Fairyland all the time. Taking advantage of this and following out a suggestion of her own, that a bad fairy had made a house in her tooth, I said, taking up an excavator, "Now, I'll just take this little fairy axe and break into his house and drive him out. You listen to him jump from his bed when he hears the noise on his roof." And so I got the walls of the cavity broken down, much to the amusement and enjoyment of my little patient. Then wishing to use a bur I remarked, "I'm going to take this fairy broom now and brush the fairy family out of their house," so I proceeded to drill. Any pain connected with it I blamed to the fairy family rushing around to escape the broom, and that one by one they were being caught and thrown out by it. After the house was swept clean I repaired the hole in the roof and the tooth was filled.

Another case, a little lad who is a soldier from the ground up, made the remark to me that the enemy had entrenched themselves in his teeth. His enjoyment and interest were intense when I attacked the fortifications with picks, shovels, and machine drills, and finally compelled the enemy to surrender. The breaches in the forts were then repaired and our men placed on duty to guard against a return of the enemy. My orders were that every night and morning he was to go carefully over the outside walls with a brush and a dentifrice to clear away any of the enemy that might be lurking around. So I succeeded, not only in making the operation a pleasure to him, but in getting him to take an interest in keeping his teeth clean. I could name dozens of other cases where, by taking advantage of the child's power of imagination and love of stories, I have succeeded in changing its thought of terror to one of pleasure so that the child would even pretend there was something wrong with its teeth, as an excuse to be taken to the dentist. One little chap came in with the remark, "Dr. Eaton, I've come back to hear the rest of that story."

Now, what has taken place in the above mentioned cases? Simply this: by the attention being diverted, new and pleasing pictures have been formed in the child's mind which are intimately connected with dentistry. The story or suggested thought is the prominent feature of the visit in the child's mind—filling the teeth a mere incident.

To illustrate my point: I contend that a very large part of the disagreeableness in connection with a dental operation is due to the picture that is formed of it in the patient's mind. For instance, have you not all experienced the following: Begin to prepare a cavity by breaking down the walls and your patient goes

through all sorts of contortions until you say, this is not near the nerve, or this is not a sensitive part of the tooth, when they immediately quieten down and allow you to proceed with the work. It seems strange that it should be necessary in certain cases to inform one's patient that this part or that is not sensitive when they should be the first to find it out. What is the explanation? They have the thing so pictured in their minds that it is going to hurt, it is necessary to inform them to the contrary before they can realize that it doesn't. As I have said, there is a great variety of dispositions to deal with, and while the methods I have suggested might work wonders in certain cases, they would not appeal in any sense to others. For instance, there are those who, if played with, would become so familiar that you would lose control over them. These require to be treated with firmness, but understand, not impatience. Let me say with double emphasis, never under any circumstances lose your temper with children. This sometimes requires an abundance of grace. Again, there are natures that study to oppose you in everything. These are not always hopeless cases. They are to be handled as Paddy did the pig that persisted in going in the direction opposite to that desired. He just began to drive it in the opposite direction to that in which he wished it to go and so succeeded. To illustrate: I attempted to put in some cement fillings for a little girl, I could not apply the rubber dam, and the trick was to keep the cavities dry long enough to get the cement in, for as soon as she discovered that I was anxious to keep them dry she was just as anxious to get them wet. After an unsuccessful attempt I said to my assistant, "Now, I'll say she will get them wet this time, what do you say?" "I'll say the same." I could then see determination in her face to keep them dry, and as I proceeded I would remark, "If she would only begin to talk and get those cavities wet then we would be right;" but no, her tongue would remain motionless until the operation was completed, when I would announce to her great satisfaction that we were wrong.

Another little patient brought by her mother would not sit in the chair. I at once had her mother take the chair and I proceeded as if doing work for her while the child stood in front of her saying she would not let me fix her teeth. I said, "O! I haven't time to do yours to-day. I'm too busy; couldn't do it if you wished me to." She immediately changed her tune and wanted her teeth fixed.

I feel that I have very inadequately expressed what has long been in my mind and heart regarding this very important subject; but I trust I have thrown out some hints that may at least stimulate interest and thought along this line. As we are the fathers of the next generation of dentists, so these little ones are to be their patients; let us shoulder the responsibility that is placed

upon us and hand them over to our successors in such condition as will reduce in a very large measure the disagreeable aspect that seems to be associated with the name of dentistry in the mind of the public, as well as of the dentist.

BANDED LOGAN CROWNS.*

BY EDWARD C. ABBOTT, D.D.S., L.D.S., TORONTO.

In considering this subject, I wish to recall to you methods of adjustment which materially enhance the possibilities for attaining a higher degree of usefulness, and by which we are enabled to combine those æsthetic and hygienic requirements which add much to the success, comfort and permanence of the Logan crown.

A careful consideration of the case is, of course, essential before we decide that a Logan crown will meet all the requirements, as the successful application of this and of all porcelain crowns is necessarily restricted by conditions of occlusion, etc., but when judiciously applied and skilfully executed, the banded Logan may be accepted as being among the ideals of modern dental prosthesis.

It probably might be well to consider, in the first place, a few of the steps in construction of one of the more familiar methods, viz., the soldering of a gold hood (by which I mean the cap and band) to the post of the Logan. Having prepared the root and constructed the cap and band as for the ordinary Richmond crown, we proceed to adapt the labial face (only) of the abutting surface of the Logan to the end of the root, which, of course, has been trimmed a little below the gingival line. The crown is then cut away slightly at the gingival so as to leave a V-shaped space between it and the end of the root. Now take a thin piece of pure gold and punch a hole in the centre to receive the post, slip it over the post and burnish it to the base of the crown, leaving a portion overlapping the margins. Having cut a hole in the cap in proper relation to the root canal of the tooth for the reception of the post, place the hood on the root and force the Logan to position. A little wax placed around the post at the base of the tooth, will, when the crown is forced to place, hold the hood and crown in correct relation. Then remove the crown and hood together, the wax retaining their correct relation, and invest. Boil out the wax and solder. This method of construction is analogous, in many ways, with another I more frequently use and which we must concede has many apparent advantages. I refer to the use of porcelain body to take the place of the gold solder, and in which case we must obviously use platinum in the construction of the

* Read before Toronto Dental Society, January 15th, 1901.

hood. The procedure with regard to making the platinum hood is the same as in the former method and the labial aspect of the abutting surface of the Logan may be ground to fit the root under the free margin of the gum, although accuracy in adaptation does not require so much attention. The lingual surface may also be cut away slightly.

The correct relation and alignment having been secured, the crown is removed and the platinum hood placed on the end of the root, a small hole having been punched for the reception of the post of the crown. The crown is now placed in position, the post enlarging the hole in the cap as it is forced home. A little temporary stopping is heated and placed in the space between the cap and crown on the lingual side so as to retain these in position. The crown and hood are now removed together, still held in correct relation to one another, the temporary stopping taken away and with pure gold or platinum solder the post is soldered to the cap. Before soldering I generally wrap the porcelain part of the crown in asbestos fibre thus overcoming the danger of checking in heating up or cooling off too rapidly.

Before putting on the porcelain body it is well to place the crown on in position again and make any necessary changes, as the crown at this stage may be quite readily sprung to its proper relation. Having done this we may remove the crown, which is now ready for the body. Before using the body I find it an advantage to pulverize it thoroughly in a mortar, the ordinary body as supplied by the manufacturers being a little coarse for crown work. Having thoroughly cleansed the parts the space between hood and crown may now be filled with porcelain body tapped well to place, which is afterwards baked in the usual way.

I may say that I had intended adding one other method for the consideration of the society in the Logan crown where we have the root badly decayed, but I must plead lack of time, and I sincerely hope that in the discussion that follows this paper all these points will be brought out and, as I said before, it is very brief, but I will depend on the discussion for the important part.

FUSIBLE METAL USED IN ARTICULATING MODELS.*

BY DR. H. C. WETMORE, ST. JOHN, N.B.

To add something to the vast fabric of dental knowledge which would render an operation more easy or a result more sure, would, I think, be an accomplishment of which any practitioner might be proud, and the consciousness of which ought to go a long way

*Read before second biennial meeting of Nova Scotia and New Brunswick Dental Societies.

toward robbing the tiresome movements of our daily routine both of their weariness and their drudgery. That something material was so accomplished by at least one gentleman who addressed this convention at its last meeting is evident, I think, to anyone who followed the interesting address of Dr. Melotte on that occasion. We can only express the hope that he realized the blessings he then bestowed so freely upon the dentists of Eastern Canada, and that that consciousness may have been the means of casting at least one bright gleam of sunshine along his pathway during the subsequent two years. It was when describing his methods of constructing crowns and bridges that he referred to the various uses he made of fusible metal, one of which was in the construction of articulating models. It would be beyond the scope of these notes to make any reference to the advantages of articulating models so constructed for crown or bridge-work. These were then made so apparent that I will assume that all who listened to his remarks saw the gain, and have since profited by his instruction. Shortly subsequent to the Digby meeting the idea occurred to me that the same method might with advantage be applied in the construction of articulating models for rubber work. It might not be out of place to observe here that in the author's opinion a greater degree of exactness in our methods and accuracy in our results in prosthetic dentistry is calculated to produce a more favorable opinion among our patients than would the same increased vigilance when applied to what might strictly be termed operative dentistry. But a comparatively small proportion of the laity is competent to judge between a fair and a superior gold or plastic filling; but anyone will undertake to convince a dentist that he is qualified to state when a plate is not properly constructed and adjusted, and to indicate the defects therein. If the endeavors of such parties were confined to the dentist alone the effect would not prove so disastrous, but that is just what they will not do; and one defective piece of work will sometimes do more to stampede business from our office and to that of our contemporary than would any effort our neighbor might make to entice it there.

There is no time during the construction of a denture when an extra amount of time and care will prove of greater advantage to the operator and produce more satisfactory results to the patient than during the taking of the bite and the subsequent preparation of the models and their fixture in the articulator, and a correct articulation is hardly less essential than a correct impression. Of the various substances used in taking impressions I am a firm believer in the superiority of plaster-of-Paris wherever its use is at all possible. In the taking of impressions in wax or composition for models, probably the greatest source of danger lies in springing or compressing certain parts of the impression material when removing it from the teeth, especially where the teeth are irregular or elongated,

or both. Plaster-of-Paris may fracture, but it is neither flexible nor compressible. And since of necessity all impressions must be taken in plaster when we intend making a model of metal, we at once substitute for the uncertainty attending a wax or composition impression the certainty where plaster and metal are used. The only conceivable approach to this method in a plaster model would be by taking the impression in plaster and to then make a plaster model; but the amount of time required to prepare the impression and afterwards to successfully separate the model therefrom, as well as its inferiority when completed, would be objections sufficient in these days of rush and hurry to put the operation beyond the range of practical dentistry.

My method of procedure is, briefly, as follows: take a plaster impression of the teeth which are to articulate, with those of the denture to be constructed. It will be found advantageous, although not absolutely necessary excepting in the more difficult cases, to first lightly coat the teeth with oil or other lubricant. It is not at all necessary to press the impression material so as to obtain the imprint of the gums or even the entire length of the teeth. The cusps and over-bite of the anterior teeth are all you really require, and by constantly bearing this in mind you experience no difficulty whatever in removing the impression without fracture in all ordinary cases. Should a fracture occur, the parts can be replaced and held there with a little molding. If the teeth are isolated it will be necessary on removal of the impression to connect, by grooves cut in the plaster, or by the addition of a little moldine, the imprints made by each so as to enable the fusible metal to unite them when the model is being poured. Grooves cut in the impression have been found to be very satisfactory and they require but a moment in construction. There is no need to wait for the impression to dry out; the model may be run immediately after the impression is removed from the mouth. All that is necessary is to hold the surface of the impression a few seconds in the flame of a Bunsen burner and as soon as the metal is ready, pour. The best temperature at which to pour will soon be learned by experience; the metal should be first heated until entirely fused and then allowed to cool till it reaches the consistency of a stiff batter. In this state it may be built up until the model is quite thick, if for any reason such thickness is desirable. As soon as pouring is finished dip impression and attached model in water and pry apart, and a perfect model of the cusps and parts of the natural teeth is the result. Should there be any ragged edges to the model, these may be trimmed with a hot spatula. Five minutes will be found sufficient for the entire procedure, including the mixing of the plaster, which time will be found considerably less than is necessary when wax or composition is used, and even then the model is not sufficiently hard in the latter case to use without fear of chipping or abrading the cusps, for some two or three hours.

Metal models will be found particularly advantageous in two special classes of cases. In the construction of temporary dentures, where little, if anything, can be gained by trying in the wax plate with the teeth attached, and where, I think, the usual practice is to proceed without doing so, after using the most extreme precautions in taking the bite, and in securing a good articulating model, and in certain repair cases—rush jobs—when one or more teeth are to be attached to a denture, and where the articulation is so obvious that it is unnecessary to put the case in an articulator, provided a correct articulating model can be secured. An accurate articulating model can be made of fusible metal, say in five minutes; in ten or fifteen more the teeth to be added can be properly ground and articulated, and the case is ready to be flaked and vulcanized in a space of time which would be an utter impossibility did we have to wait for a plaster model to harden sufficiently for working purposes before proceeding. In these days of active competition every dentist has to make the most of his time and opportunities if he hopes to maintain his place in the race in which most of us are struggling, and I claim that any process which promises greater dispatch, combined at the same time with greater accuracy than the methods previously in vogue possessed, and which requires no more, if as much, skill in application, is at least worthy of a consideration and a fair trial. That we possess in the process of making of articulating models of fusible metal both of these features needs, I think, but a fair trial to convince even the most incredulous among us.

Proceedings of Dental Societies

TORONTO DENTAL SOCIETY.

The regular meeting was held in the college building, January 15th, 1901. Dr. Edward C. Abbott read a paper on "Banded Logan Crowns." (See page 46)

DISCUSSION.

The PRESIDENT—I have much pleasure in calling upon Dr. Adams to open the discussion on this paper.

Dr. J. F. ADAMS—The essayist is to be congratulated on the excellency of his paper, and also on the concise way of putting things. The Logan is a much used and a much abused crown. It is pretty and can be made to look natural; a good crown for strong roots. Its weakness is in its pin. Its chief advantage is in fitting well under the gum, thereby doing away with the unsightliness of bands. It is strengthened by the gold or platinum band, as Dr. Abbott has shown in his paper. Another and a very good

way is to use the intradental band thus strengthening the tooth and avoiding the display of gold.

Dr. McDONAGH—I may say that I have been well pleased because I have had the privilege of listening to Dr. Abbott's paper and to Dr. Adams' remarks. I am not an enthusiastic advocate of Logan crowns. Of course, I admit that there is a place in dentistry for them. However, I cannot agree with the statement that they are at any time the ideal crown. Now, with regard to adding a band and cap to a Logan crown there are some serious objections. The principal objection being that you destroy the good effect obtained by the manufacturers in annealing the Logan crowns, which they do, I believe, for three or four hours. And it only takes a few minutes in a porcelain furnace or under a blow-pipe to undo the good that has been done by the annealing. But, gentlemen, a great deal greater harm is done by the heat in many cases by the expansion of the pin. You know a Logan crown has a large pointed metal pin in it. The large end being in the porcelain and you also know, perhaps, that platinum and porcelain do not contract and expand equally under thermal changes. Now, as a consequence of the aforesaid fact, if the heat is not carefully applied your porcelain is broken or (and this occurs even when you use a great deal of care) checked badly. In fact, I do not believe you ever can bring a Logan crown to the same degree of strength which it originally possessed after you have subjected it to the flame of a blow-pipe. I am not wedded to the use of caps and bands for the crowning of teeth. If they are properly made (which is the exception) they do no harm, and if they are used properly in connection with a Logan, that is, if we must use a Logan, they do good; but, as many of you know, I have given a good deal of time and thought to a scheme to do away with the band and believe I have succeeded in constructing a crown superior to the banded crowns in every way. Now with regard to the cutting of the root to a wedge shape, as Dr. Adams suggested. I may say there was a crown invented to fit such a root called the New Richmond crown, but it has been superseded by the new forms of the Logan which we might call the New Richmond-Logan crown. These crowns have the wedge-shaped base, but the angles are rounded off and the crown is a little more easy to fit to the end of the root, a trouble we find with both those forms of ready-made crowns. We hear a great deal, gentlemen, of the efficacy of this wedge-shaped root, its advocates claiming that the line of force of mastication is at right angles to the resistance. The resistance being from one side of the wedge. This is true; but what about the other side of the wedge. If we think for a moment we will see it is parallel to your line of force, and this will give you a rotary motion, thereby lifting the crown from the root. I said lifting the crown from the root, and in this fact, to my mind, lies the only good of the wedge-

shaped root, for if the crown is lifted off the root is not split, and you will find that in those crowns that although they may not stay on as well as some others, still they never split the root which would be the greatest calamity we could have befall a crowned root. Now, the Logan crown, which has been banded or added to after having been manufactured, has this virtue also that it is not likely to split the root, for the porcelain has been weakened, and it will break off first. It seems strange why dentists try so hard and spend so much time trying to contrive some way by which they can make Logan crowns of service to them. Perhaps it is that we do not realize the fact that we can make up a better crown in less time than it takes to fix up the Logan. In most places it is very difficult to get the proper shade of a Logan crown, whereas we can much more easily get the proper shade and size in a plate or even rubber tooth, for you know we can afterwards use rubber teeth for crown-work. There is just one more remark I want to make and that is that the Logan crown costs more than we should have to pay for it and we can make a better crown in half an hour, or perhaps less when we get expert, and if we always use Logan crowns we will never get expert, so therefore, for the practice of it, we should not fail to make every crown.

Dr. PEARSON—I have a word to say regarding Logan crowns. Probably, I should say nothing, because my experience is a negative one. I know the crown only from what I have seen of its use by other men, but the conclusion I have come to, is sound. I am sure you will agree with me when I say that the Logan crown should be used only on a sound solid root, never on a weak or partially decayed one. Even on sound roots I think it is objectionable because of the great amount of tooth tissue to be cut away, and because of the difficulty of securing results, which, from an artistic point of view are equal to the porcelain crown built with a plate tooth or facing and fused in the furnace. To my mind there is not sufficient variety of tooth forms or of color in the Logan crowns to secure harmonious results at all equal to the demands of a careful practitioner. A former speaker said the crown was a pretty crown. Let me ask you to consider the effect of a pretty Logan crown in the mouth of an old smoker. You have all seen them. A single pretty tooth or even a row of pretty Logans will not beautify a patient. They must harmonize with their surroundings. A pretty crown in the hand is often hideous in the mouth. (Draws diagram and explains his method of adapting platinum to the end of a root.)

Dr. TROTTER—It appears to me that all the crowns which have just been described and alluded to imitate the ordinary banded Richmond crown without improving on it. In my estimation they do not approach it for strength and durability. I cannot understand how Dr. Pearson obtains room for a sufficient thick-

ness of porcelain body, at the palatal, mesial and distal gingival margins of the crown he recommends to get strength enough to insure him against the porcelain chipping away from the platinum at those thin edges. Personally, I adhere to soldered crowns more than to baked ones. In most cases the Logan gives artistic results, but most certainly lacks strength and fails to support delicate roots. If large firm intact roots are selected for their insertion they are usually a success if accurately fitted. It was only yesterday that a case presented itself at my office, which exhibited both the weakness and the strength of the Logan crown. One of the soldiers, just returned from the South African campaign, had lost the Logan pins and all off both laterals and one central. The other central root which was a much stronger root apparently, presented a perfectly fitting Logan which stood all the "hard tack" and rough usage without injury. This proves that Logans are only suitable for powerful roots where there is little loss of structure by decay, where a perfect fit is possible, and where the occlusion is not excessive. The weak lateral roots and the much decayed central root succumbed to the hard usage, and proved the Logan crowns unadapted to these cases.

Dr. LENNOX—I was rather under the impression that I had obtained somewhat artistic operations with Logan crowns. Dr. Pearson says that they are not of a proper form. I have not the same difficulty in teeth not being of the proper form. I have been quite successful with Logan crowns. Dr. Pearson objected to the cutting away of tooth tissue. My opinion of the Logan crown is that it is not a question of appearance but a question of strength. Dr. McDonagh said he always preferred a soldered crown to a Logan crown. I certainly have had superior results with the Logan crown than I have had from a soldered crown. There is more inclination for the crown to lose its proper position in a soldered crown than in a Logan crown. My particular reason for bringing up the question of artistic effects was that I am under the impression that a more artistic effect can be obtained with a Logan crown. I have not had difficulty in getting the forms that I required.

Dr. PEARSON—Allow me one moment. I quite agree with Dr. Lennox that he can trim and fix up a Logan crown to obtain artistic effects. As far as I know, Logan crowns are pretty much the same, and you have to trim them to suit the case. Dr. Lennox grants exactly my claim when he admits that he has to grind the Logan form to harmonize with the case in hand so that I still fail to see the advantage over the crown built purposely for the case. A banded Logan has no advantage over the crown I have demonstrated, and I think it is not as good.

Dr. WILKINSON—I want to say that I take very great pleasure in the fact that one of the younger members of the society has

prepared an essay for to-night, and I hope the example will be followed by other young members of our society.

Dr. TROTTER—I do not like to have the porcelain body so thin and frail at the sides. I do not see how he gets any strength in doing so.

Dr. PEARSON—On the palatal side of the crown, of course, the porcelain is made thicker, but on the approximal borders of the cap (refers to diagram) there is no porcelain, for it would chip off immediately. I use a heavy piece of platinum, twenty-eight or thirty gauge, burnished over the edge of root, and in that way add some strength to the crown, but the scheme is more for a protection to the cement than for greater strength.

The PRESIDENT—We shall call upon the essayist to close the discussion. Dr. Abbott presented this paper with the intention of taking up just one point for discussion, and that was the Logan crown with cap and band, and if we had held strictly to the pros and cons of that subject we might not have gotten into the subject of root trimming, but one way of discussing the question is to show its relation to all other crowns, and with that in view the gentlemen have discussed it and got valuable points out of it.

Dr. ABBOTT—I might say that the subject was not of my own choosing. It was suggested and allotted to me as a paper, and, as the President has said, it was intended to cover one point only, and that the "Logan crown mounted with a cap and band." In reference to the objection that we spoil the texture of the porcelain in heating a Logan crown, I should say that there is just as much, if not more danger when we heat the ordinary facing. The temperature at which a Logan crown is fused is far in excess of that at which the facings are fused. I have seen a tray of teeth of different sizes, some of them Logans, others facings, and all of which had been made from the same mixing of body and all baked at the same time. One would think that these would come out all the same shade, but this was not the case. The Logans retained the bluish tint intended, but the facings came out quite a lighter shade. So that in heating a Logan we need not fear destroying the color or texture, as much as we do in the case of a facing. As regards the unequal expansion and contraction of the platinum, compared to that of the porcelain, we must not lose sight of the fact that this platinum post and porcelain body have already been subjected in the manufacturers' furnace to a far greater strain in this respect than we are going to give them either with blow-pipe or furnace. If we are going to have checking as a result of inequality in expansion and contraction in this case, where there is so little platinum involved, what must we expect in the case of a porcelain bridge, where we construct a regular trestle-work of iridio-platinum so as to give strength? These bridges are often baked three or four times before we secure the

proper results, and yet with ordinary care we have no sign of checking. In view of the fact that there are so many of these crowns being used, and the sale of them is increasing, is it not well that we should at least know how to use them to the best advantage? The artistic effect of a Logan crown, properly selected, is certainly equal to that of any porcelain crown, but we must not use this, nor any other crown promiscuously. We must have a certain license before we use any porcelain crown, and when we decide that a Logan meets all the requirements, then, in order to secure greater permanence, both as regards the cement and in retaining the relation of the crown to the root, we add the cap and band. In preparing the root for the reception of this crown we need not sacrifice any more tooth tissue than we do in the case of any other crown. The procedure is exactly the same as with the ordinary banded Richmond. We cannot claim the same degree of strength for the Logan, or any porcelain crown, as we do with the soldered crown, yet we must acknowledge the advantage of porcelain from an artistic standpoint. There are several other matters which I would like to speak about, but as they can hardly be regarded as applying to the paper, I will not touch on them at this late hour. I am very glad that the discussion has brought out so many important points.

NOVA SCOTIA AND NEW BRUNSWICK SOCIETIES.

The second biennial meeting was held at St. John, N.B., August 29th, 30th, and 31st, 1900.

Dr. H. C. Wetmore, St. John, gave a carefully prepared writing on "Fusible Metal Used in Articulating Models." (See page 47.)

An afternoon was spent in viewing the splendid displays of The S. S. White Dental Manufacturing Co., of Boston, Mass.; Messrs. Patterson & Foster, Montreal; Messrs. McDowell & Pattison, Montreal; Jas. A. Macdonald, Boston, Mass., and Parke, Davis & Co., of Detroit, Michigan. The exhibit of dental supplies shown by Patterson & Foster, Montreal, was large and creditable, including a full line of artificial teeth, and all the sundries pertaining to the dental profession. In addition to the usual lines, they showed a complete outfit for latest crown and bridge-work, also electrical furnaces, and the porcelain inlay system, which is now largely to the front in all the principal cities. The Pattison Dental Manufacturing Co., of Montreal, displayed the Hammond electric engine, a very modernly equipped cabinet made by the Harvard Co., of Canton, O.; the Clarke fountain spittoon, of Chicago, etc. This company is an agency of the Consolidated Dental Manufacturing Company, of New York. The Webster gasoline blow-pipe outfit, and the Snow vulcanizer with regulator,

for kerosene, were also features in this exhibit, which was in charge of Mr. Geo. A. Patterson himself. The Boston Dental Depot, represented by Mr. J. A. Macdonald, had a general exhibit of dental instruments, including the Harvard 1900 forceps, Boston forceps, Libby instruments, Libby cervical clamp, Andrew saliva ejector, etc. Brown & Webb, of Halifax, N.S., were displaying the goods of The S. S. White Dental Manufacturing Co., of Boston, including the largest assortment of artificial teeth ever seen in the Maritime Provinces, the 1899 model of the famous Wilkerson dental chair, which proved a great attraction, full lines of dental supplies, etc. Arthur W. Webb was present for the firm of Brown & Webb, and F. S. Horton for The S. S. White Co., of Boston. A. S. Johnston represented Parke, Davis & Co., of Detroit, with samples of laboratory products used by dentists, such as chloretone, euthymol tooth paste, and euthymol, Johnston's antiseptic soap and extract of red gum, also a hundred other minor preparations.

At the Thursday evening session Dr. Langille, of Truro, gave a clinic on "Lining Vulcanite Plates, Crown and Bridge-Work, Making Polishing Cones."

To the economist of time and labor Dr. Langille's method of lining vulcanite plates appeared to be of inestimable value without any sacrifice of accuracy. The making of polishing cones revealed a single and inexpensive substitute for common cones on market. On crown and bridge-work the methods in vogue were compared.

Interesting discussions followed the doctor's three-sided clinic.

NEW BRUNSWICK COUNCIL OF DENTAL SURGEONS.

The eleventh annual meeting of the Council of Dental Surgeons of New Brunswick was held in the Mechanics' Institute, St. John, N.B., on August 30th, 1900. Meeting opened at 10 o'clock a.m., Dr. J. A. Murray, the President, in the chair.

The Council transacted its business and elected the following officers for the year: President, S. T. Whitney, D.D.S., St. Stephen; Registrar, Frank A. Godsoe, D.D.S., St. John.

Board of Examiners elected were: H. C. Wetmore, D.D.S., St. John; Chas. A. Murray, D.D.S., Moncton; Edward Manning, Esq., St. John.

Council adjourned to meet in Moncton in August, 1901.

TORONTO DENTAL SOCIETY CLINIC.

This clinic, is to be held February 25th and 26th, notice of which was given in the January number, and should not be confounded with the Ontario Dental Society Convention, which has been postponed, notice of which was given in the proceedings of the last meeting of the Board.

W. G. S. SPAULDING, Sec.

MANITOBA DENTAL BOARD.

The regular annual meeting of the Manitoba Dental Board was held in Winnipeg, January 8th, 9th, 10th, 11th and 12th. Four licenses were granted to practise dentistry in the province: C. H. Walsh, Winnipeg, Man.; E. Fitzpatrick, Vankleek Hill, Ont.; C. A. Fitzpatrick, Vankleek, Hill, Ont., and G. W. Walker, Carberry, Man.

NEW BRUNSWICK DENTAL SOCIETY.

The eleventh annual meeting of the New Brunswick Dental Association was opened in Mechanics Institute, St. John, N.B., on Thursday, August 30th, 1900, at 3 o'clock in the afternoon, Dr. J. W. Moore, the President, in the chair.

After the reading and confirmation of the minutes by the society the Secretary read his report, which showed the society to be in a good condition, both as to harmony among its members and financial standing. Four dentists had registered during the past year and were added to the roll of membership.

After the routine business of the society had been transacted the following officers were elected for the ensuing year: President, F. W. Barbour, D.D.S., Fredericton; Vice-President, W. P. Bonnell, D.D.S., St. John; Secretary, Frank A. Godsoe, D.D.S., St. John.

Meeting adjourned to meet in Moncton, N.B., on the fourth Thursday in August, 1901.

MESSAGE OF SYMPATHY.

Mrs. W. George Beers, Montreal.

Accept the sincere sympathy of the Directors of the Royal College of Dental Surgeons of Ontario, in your great bereavement. Did not receive notice of funeral in time to send representative.

J. B. WILLMOTT, *Secretary, R.C.D.S.*

Selections.

SOME PRACTICAL POINTS ON OPERATIVE DENTISTRY.*

BY DR. THOMAS P. WILLIAMS, HOUSTON, TEXAS.

I wish to call your attention briefly to a few points suggested to my mind which are important to the operative dentist, and just

* Read at meeting of the Texas State Dental Association, at Dallas, May, 1900.

in the manner as they are disposed of, lead to success or failure. The first point I will mention is space—all important—as no man can put gold or amalgam where he cannot put the point of his plugger. There are various ways of obtaining necessary space. I heartily condemn the old barbarous and unscientific method of separating with rubber. The only reason rubber was ever used, was the “old timers” had no other way. But in this time and day of first-class and efficient separators, there is no reason on earth for a dentist wasting his time and torturing his patient by using rubber. Some may say there is danger in the separator, but after fifteen years’ constant use I am prepared to say there is no danger, provided common sense dictates the application of them. Don’t expect to separate all the teeth with one separator, and that one, the “horse killer” of Ivory’s,” which in many cases constitute the “all” of dentists in this line. Get the full set of Perry’s, and the “Little Giant.” No operative dentist can afford to be without them. Use the separator made for the teeth in hand. See that the points do not impinge upon the gums. Use gentle pressure at first, holding clamp steady with left hand until tight, allowing time for parts to give. In the interim you can be chiselling and paring walls, then a little more pressure, and in this way an abundance of space can be obtained in from ten to fifteen minutes without any loss of time, and many times without even a grunt from your patient. The separator holds the teeth steady, and consequently no complaint from jar during process of filling. After insertion of filling more space can be secured, which is always necessary where it is desirable to retain contour. We can obtain the much desired space sometimes in the manner in which we cut and shape our cavities, and still not be at the expense of needed tooth-structure. But let me say that I condemn the way some operators cut away the strong labial walls of incisors, and leaving the brittle lingual walls—looking for an easy job, but always at the expense of the longevity of the fillings and the general appearance of the patient’s mouth. In separating, excavating and shaping our cavities, we should ever have in mind the welfare of the tooth. Many times a small amount of cutting in certain directions would materially weaken a tooth, but in another upon the lateral walls of these teeth. For the retention of fillings another point is to have walls and undercuts so they can be as nearly as possible reached with the plugger with direct axis of force. Another important point which is daily impressed upon me, and no doubt upon many of you, is the great number of failures of amalgam fillings in approximal cavities of bicuspid and molars, chiefly due, I think, to too limited cutting. We cannot depend upon the lateral walls of these teeth for the retention of fillings; usually they are thin and weak and will not stand the stress of mastication. I therefore advocate extending these cavities bucco-lingually and upon occluding

surfaces, whether decayed or not, making good large flat cavity and step. In leaving this point I enter a plea for more extended cutting of tooth substance than is generally practised, for the two-fold purpose of removing weak walls and semi-decayed dentine and to facilitate the thorough packing and adaptation of material to cavity walls, which is so necessary to prevent recurrence of decay, thereby producing successful operations. Have chisels and excavators sharp. But above all things use sharp burs. Don't try to economize on burs. After an experience of nearly twenty years I am confident, and am prepared to say, as I have used nearly all the obtundents, and taking all things into consideration, sharp burs, in a true hand piece, turned by an electric motor or good, fast engine, is the best all round obtundent of sensitive dentine extant. I wish also to call attention to the slip-shod operations many dentists are in the habit of doing with amalgam—abusing their best friends. Don't half prepare cavity, slap the stuff in, wipe off with cotton, turn them loose, making no pretense at polishing and finishing. While I am an advocate of gold, in all cases where a lasting operation can be made, whether in molars or incisors, I tell my patients that the salvation of many teeth does not depend exactly upon what they are filled with, but upon how they are filled and finished. Therefore, I use amalgam in many cases and always try to be as careful of preparation of cavity as with gold. A well-finished amalgam filling in a properly shaped cavity is not to be sneezed at. How many of us pay any attention to contouring and knuckling amalgam fillings in approximal cavities of bicuspid and molars, so necessary to the comfort and welfare of our patients? Let us be more careful and painstaking in this class of operations, taking time to separate, contour, polish and finish without destroying contour. These things take time, but are well worth it. Since the advent of quick setting amalgam it can be done at one sitting. For Heaven's sake try and educate your patients up to the point, that you are charging for the work and your time, and not for what you are putting in the tooth, doing away with prevalent ideas that an amalgam filling is cheap. So let us pledge our best endeavors to pull amalgam out of the mud and mire, and place it upon the high ground which it deserves. One other point I wish to make and I am through, that is, the crowning of many teeth which could and should be filled. Only a few days ago a gentleman came into my office, said he wanted me to crown a tooth for him. I examined his mouth, found five or six crowns, showed me a good strong molar with good sized anterior approximal cavity. Said he wanted it crowned. I remarked that it needed filling only. "Oh, no. It must be crowned, then it will be good for all time and I am surprised that you are trying to talk me out of it." I inserted a gold filling, which no doubt will preserve that tooth for a number of

years. No one knows better than a dentist that a tooth well filled is infinitely superior to one crowned, more comfortable, more sightly and more hygienic. Therefore, crowns should be used only when teeth are beyond the pale of salvation by filling. Let us at all times advise candidly and honestly what we think best, leaving our interests in the back-ground for the time being, doing good, thorough work, for which we can charge a justly remunerative fee.—*Texas Dental Journal*.

PULP-DIGESTION.*

BY A. W. HARLAN, M.A., M.D., D.D.S., CHICAGO, ILL.

In presenting to your notice the subject of pulp digestion it is my aim to provide a method for removing from the roots of teeth dead pulp-tissue which, through lack of skill or lack of operative technic for its thorough removal, is ordinarily allowed to remain. Many methods of obviating the necessity for pulp-removal have been presented to learned societies, all based on the hypothesis of pulp-mummification, and that subject is covered in other communications presented to the Congress.

In looking over the subject of mummification I do not find in the department of surgery any analogy for such procedure as a permanent operation.

I conclude that the destruction of pulps by any method means their removal from the roots before it is a safe surgical procedure to fill them. If this proposition be true, I desire to call your attention to a process for the liquefaction of pulp-tissue in small tortuous roots and those not easily accessible.

In times past the digestion of animal tissue has been accelerated by the use of pepsin or some of its preparations, and of starchy matters by taka-diastrase. In the year 1881 Van Antwerp, of Kentucky, discovered that the fresh leaves of pawpaw, or *Carica papaya*, would digest fresh meat, beefsteak, and other animal flesh.

The pulp, as is well known, consists of blood vessels and other tissues, and is dissimilar to any other formation in the body. It is capable of coagulation, and will undergo putrefaction after death, the same as others of the soft tissues. This being granted, we must at once concede that there are teeth having very attenuated and twisted roots, where it is almost a physical impossibility to remove all the dead pulp-tissue before the putrefactive process begins.

To relieve us of this operative procedure, I have long been interested in the digestion of such tissue, and will present now the

* Read before the International Dental Congress at Paris, August 8th, 1900.

experiments to show the possibility of liquefying such tissues in teeth.

Papain (papayatin), which is obtained from the *Carica papaya*, is now procurable from such manufacturers as Merck, Schuchardt, and others. It is a whitish, somewhat hygroscopic, powder, having the taste of pepsin. It is soluble in water and glycerol. It is active in an acid, neutral, or faintly alkaline solution. It has been used notably in general medicine, diphtheria, in fissures and ulcers, and generally in the domain of surgery as a digester. In stomachic disturbances the best results have been obtained. It is absolutely non-irritating; it is a non-coagulator, and without action on living tissue. The fresh leaves of the pawpaw have long been noted in our country for their softening effect on tough meat, the joints of fowls, etc. My first experience with pawpaw began more than three years ago. The first requisite in its successful use is to have the pulp dead. It does not act well when made into a fresh paste with water unless it is slightly acidulated with hydrochloric acid, one to three hundred. Its action is slower when a dead pulp has been treated with acids, creasote, carbolic acid, or zinc chloride. When oils have been rubbed on the surface or arsenical paste has been in contact with a pulp its solution or digestion is not retarded.

I find that pulp-tissue is digested more rapidly if the surface has been lightly painted with one to two hundred sodium fluosilicate, or a solution of borate of soda, one to two hundred; carbonate of soda or magnesia may be used, but not in excess.

If one gram of papain is made into a thick paste with glycerol and a drop of hydrochloric acid solution, one to three hundred, is added it always acts well. My experiments out of the mouth were conducted as follows:

Freshly extracted teeth were taken and the roots enveloped in cotton soaked in distilled peppermint water; the pulp-chamber was opened and the first pulp had the paste applied to it without first touching it with any drug. The remainder were touched with alcohol, zinc chloride, arsenical paste, oil of cassia, creasote, carbolic acid, and sulphuric acid. As much of the paste was packed into the pulp-chamber as it would hold, and the cavity was sealed and the roots kept moist in a chamber where the temperature was even at $98\frac{1}{2}^{\circ}$ F. These cases were examined at the expiration of twenty-four hours without sensible effect. They were again examined in forty-eight, seventy-two, and ninety-six hours. Complete solution would not take place under ninety-six hours, and if there was considerable pulp tissue in the root it was usually five to six days before solution would take place.

When the roots of the teeth were enveloped in liquid vaseline or in distilled water to which half of one per cent. of peppermint or cassia had been added, the results were almost identical. During the past winter and spring months I used about one hundred and

fifty freshly extracted teeth, but found it impossible to digest fragments of the pulp in small or tortuous roots under five to six days. In the mouth, clinically, the papain will act more rapidly, four days being usually sufficient to digest small fragments of pulp-tissue. If a large mass of pulp-tissue remains in a tooth the papain paste must be reapplied at the end of the second day, and occasionally for a third time. I have found from repeated experiments that it is best to remove all tissue in sight, and then pack the roots and pulp-chamber full of the paste and seal with oxysulphate or oxyphosphate of zinc, and let it remain without interference five to eight days. In this way the patient suffers no uneasiness, and there is no risk of pericemental irritation. Putrefaction does not take place in the presence of a solution made in glycerol.

It is needless to remark that this operation must be done under antiseptic precautions from beginning to finish.—*Dental Cosmos*.

DON'T!!!

BY H. L. BELCHER.

Demonstrator-in-Chief, Dental Infirmary, University of Buffalo.

Use acids to remove tartar.

Use gutta-percha as a pulp capping.

Burnish an amalgam filling; gold will spread under the burnisher, but amalgam will not.

Go to the chair with soiled hands. Wash your hands so that the patient is aware of it.

Use the automatic plugger until the enamel walls are thoroughly matted over by the gold.

Use a dull bur; it only revolves in the cavity, gets hot, doesn't cut and causes the patient unnecessary pain.

Lose sight of the fact that the "foot plugger" is responsible for many poor fillings, simply because this valuable instrument is used in wrong places.

Forget the fact that your first duty is to remove all extraneous material and to put the mouth in as nearly a "hygienic condition" as possible before any fillings are inserted. Some skilful operators ignore this.

Put in a gold filling unless you can see the whole cavity. The pellet of gold should be soft when it reaches the cavity, hence it will not do to crowd it in between the teeth. Good separation is necessary.

Stand on "sentimental ideas" when you are opening up a pulp chamber; you must have good access to the canals. This will

often require the sacrifice of considerable tooth structure ; but it is unavoidable.

Seal a cavity with cotton and sandarac varnish. It becomes offensive in three to four hours. The patient cannot clean the teeth with any degree of satisfaction, the taste of varnish is objectionable and they cannot enjoy their meals with the flavor of varnish predominating.

Forget that what we term " hand pressure " is the first principle of packing and condensing gold into a cavity. The more gradual the pressure exerted upon gold foil in condensing it, the less it loses its quality of cohesiveness ; sudden, sharp or rapid pressure lessens the cohesiveness.

Forget that in using the automatic plugger the stroke should be as short as possible, consistent with volume of blow. The long stroke is slow and awkward, besides adding to discomfort of patient. If the instrument is out of order a few drops of oil will do wonders for it. Cleaning the instrument isn't a bad thing either.—*College Forum.*

Abstracts

THE VALUE OF EXACT METHODS IN OPERATIVE DENTISTRY.—If we should review the earlier beginnings in the filling of teeth we will find that there was but very little of method in the adaptation of fillings to the eradication and cure of caries ; the facts we have been stating had not been made out. There was also as little of method in the manipulative field. Each man was a law unto himself, using such instruments as his personal experience dictated, preparing his cavities only with the view to retain the filling-material that should be placed in them, without any guide as to the relations of the surfaces of the teeth to the beginnings of caries, or any guide from the experiences of men as to necessary methods of cutting the teeth or of instruments adapted to his use. It seems that in the earlier years of filling teeth each man formed his own plans without much consideration of the plans of others, and for this reason great differences were found in the methods of manipulation and in the results of the manipulations. A few men seemed to have learned the art of filling teeth in a mechanical way and succeeded well, while the great majority of men who undertook filling operations made a general failure. Not sufficient nomenclature had been formed by which successful men could explain their methods of manipulation or describe the instruments which they used. It has been necessary that a nomenclature should grow up among us and become understood by the members of the profession before these manipulations could be explained. This has been

growing and becoming more and more perfect as the years have gone on, until we are arriving at a better position to-day than ever before, so that we may talk with each other more intelligently and understand each other better. These subjects have been discussed and rediscussed in the past, often in language so vague and in a terminology so imperfect that the persons presenting their views were dissatisfied with their success in making them clear, and those listening often gained but very little idea from their descriptions. The result has been that among different men the methods of operating have been very different, in the instruments employed, in the shaping of cavities, and in the results of operative procedures. It is quite possible that two distinct methods of doing a mechanical operation may both be good methods; it is hardly possible that two distinct methods will be equally good; one will inevitably be better than the other. It is the best method that we wish to attain, and if we should happily obtain the best method of any one mechanical proceeding-it would be best that all learn that method. The first proposition in the mechanical execution of filling teeth is that we should so lay the enamel margins of the cavity when prepared that they will be on immune areas of the tooth's surface, or upon surfaces that are habitually kept clean by the excursions of food in mastication. This is a basic principle that should on no account be lost sight of in the preparation of cavities. It includes all that has been known under the phrase "extension for prevention." And let me say here that extension for prevention does not necessarily mean the cutting of large cavities, but it does mean the choosing of the positions of enamel margins and the placing of them in such positions that decay will be least likely to occur along the lines of the enamel margins; and by enamel margins in this connection I mean the outline of the cavity when prepared. A second proposition is that the cavity should be so formed as to furnish sufficient resistance to the dislodgment of the filling when placed, the strength of the filling-material and the strength of the tooth-substance both being known and carefully considered. As a third proposition the cavity must be so formed as to be readily accessible and convenient for the placing of the filling-material; for the adaptation of the filling-material to the walls and margins of the cavity is difficult at best, and it is important that every means be taken in the preparation of the cavity to render the placing of the filling as convenient and as certain as possible. Now a few simple rules, if well learned and applied, will guide us very certainly in the preparation of cavities to the easiest method for ourselves and to the patient, to the quickest method, and to the surest method. These rules may be stated in this way: First, choose what shall be the lines of the cavity margins when complete and cut to those lines, or, in other words, obtain the outline form;

second, obtain the resistance form; third, obtain the retention form; fourth, obtain the convenience form; fifth, remove any remaining decay; sixth, trim the enamel margins to form in relation to the enamel prisms, bevel the cavo-surface angles, and make the toilet of the cavity. This order of procedure is simple and easily followed, and its strict observance gives certainty of method, rapidity of operating, and regularity to the procedures from step to step; at the same time it is sufficiently elastic to give wide range of choice and invention. In obtaining the outline form the operator is guided by two prime considerations: First, he chips away overhanging enamel margins or carefully examines superficial areas of decay and obtains a clear conception of the area of destruction in its relation to the area of the surface of the tooth involved. No effort should be made at this time to remove the deeper portions of decay; it is not necessary to even explore the deeper portions of the cavity. The determination of the superficial areas in prepared cavities is the first step, and the whole attention should be concentrated upon that. As soon as the superficial area of destruction is sufficiently determined the case is studied from the standpoint of the future liability to decay, which will be based upon the appearance of the decay in the case in hand, the family history as to hereditary tendencies, the degree of susceptibility of the individual, and the age of the patient. All of this will be considered from the standpoint of the operator's knowledge of the histology of the tooth, his knowledge of the causes of caries, his knowledge of the conditions of the beginnings of caries, and the consideration of the situation and surroundings of this particular cavity in its relation to neighboring teeth and the cleansing effect of excursions of food during mastication. The lines of the cavity margins should be so chosen that they will traverse lines of immunity, or, in cases of a high degree of susceptibility, lines of the least degree of susceptibility to decay. It will be apparent at once that in pit and fissure cavities in the occlusal surface of molars and bicuspsids the whole outline will be subject to the friction of mastication, so that the operator will only have to search for lines of the surface sufficiently level to afford a good finish. But when other surfaces are treated the utmost care must be used in the selection of the outline form in all cases in which there is any considerable degree of susceptibility, and always in young persons. This is another expression, or explanation, of what I have meant by extension for prevention. Understand me that extension for prevention does not necessarily mean the cutting of large cavities, but most generally in approximal surfaces, when the laws for cavity preparation have been fulfilled in cases of considerable susceptibility to decay, the cavities are necessarily broad. The exactness with which this may be done by the individual will depend upon his knowledge of the conditions of the beginnings of caries, and calls for the closest study of this in all its

bearings. Simply removing all decay, making the cavity retentive and making fillings mechanically fine, is not a high order of operative dentistry. The obtaining of the resistance form will often be accomplished, in the main, while obtaining the outline form, but will require perfecting later. In this we have the application of the rules of physics. A wise architect would not build a structure designed to carry a heavy weight upon a sloping or rounded foundation, but would build his foundation level and place his superstructure squarely upon it. Just so we must apply similar rules of physics, and seat fillings exposed to the strain of mastication upon a cavity surface cut level in the horizontal plane of the tooth, or at right angles to the line of stress, and square out all angles so that the resistance shall be equal and ample. In many cases we must provide for a stress of from two to three hundred pounds, the amount of pressure that may be exerted by the closure of one lower tooth upon one upper. In any case involving the molar teeth in persons who are able to chew their food well we will have to provide for a stress of more than one hundred pounds. While the retentive form admits of much variation in the different positions of cavities, it must be made on principles of physics; and this, to be exact and safe, must be founded upon a knowledge of the strength of the dentine and enamel and of the strength of the filling-materials used. Much of failure is chargeable to the want of this knowledge. This is true in all positions in which cavities occur, but is most notable in approximal surfaces. The full exactness of the application of principles in the working out of details of the retentive form is as yet but poorly appreciated. It admits of the widest range of invention, and yet there are definite forms and steps well made out that should be learned one from the other and followed rigidly in the various forms of cavity preparation. Exactness in this is essential to safety in this class of filling operations. In the finishing of enamel walls a very exact knowledge of the minute structure of the enamel is of extreme importance; indeed, this is very important at every step of the process of cavity preparation. Enamel is very hard, and is cut with much difficulty unless we understand it sufficiently to take advantage of its cleavage in any situation. This can be accomplished only by a close study of its minute structure in connection with careful experience in clinical procedures. But it is in the final shaping and finishing of the enamel walls and cavo-surface angles that that knowledge is most essential. The relation of these to the histological elements of the enamel is all-important to the safety of fillings. Usually the enamel wall must be parallel with the length of the enamel rods, and in no case should short ends of rods be left at the cavo-surface angle or forming the outer portion of the enamel wall. But these matters can only be treated in the briefest outline in this paper.—G. V. BLACK, in the *Dental Cosmos*.

THE surgeon who would now attempt even minor operations without the most strict antiseptic precautions would be deemed unfit to practise his profession. His hands must be thoroughly washed, all impurities removed from beneath the nails, and they must be carefully drenched with a sterilizing solution, that no contaminating fungi may be carried to a wound. Every instrument must be kept in a sterilizing solution, and sponges and napkins must be heedfully made non-infectious. The ordinary clothing must be covered with clean linen garments, that are less liable to carry infection than woollen, and every article used must be scrupulously clean. The dentist should always wear a clean linen coat at the chair. Any woollen overgarment must soon become thoroughly impregnated with disease germs, and thus he may carry contagion to successive patients. He himself and the most healthy and vigorous of them may be able to resist infection, but those who are weak and anemic and who do not possess the same withstanding ability may be seriously affected. Omission of these proper precautions will also be likely to result in infection and suppuration of wounds, which may be accidentally or necessarily made, and even gangrene may be the consequence. The dentist frequently meets with pus in the oral cavity, with gangrenous pulps in teeth, and his instruments are almost constantly infected with septic organisms. These may be deeply buried beneath the debris between the leaves of burs and the serrations of files, so that mere rinsing in a sterilizing fluid will not sterilize, and infection of perhaps the most loathsome character may be carried to the mouth of the next patient, unless scrupulous care is used. It is something more than a professional blunder when an operator will work in the presence of pus, or any infection, without subsequent cleaning and sterilizing in the most thorough manner every instrument employed, by means of some specially devised apparatus, and the use of disinfecting agents, such as bichloride of mercury, carbolic acid, potassium permanganate, formalin, and other solutions.—*W. C. Barrett.*

CONCLUSION OF MR. HOPEWELL SMITH ON THE "ASSOCIATION OF INFLAMMATORY CONDITIONS OF THE DENTAL PULP WITH CERTAIN ADVENTITIOUS DENTINES."—1. That in the majority of the inflammations, but by no means in every inflammatory condition of the dental pulp, there is found a protecting layer of hard adventitious dentine which is put in the place of danger, that is to say, opposite the breach by caries of the surface. 2. That these new dentines differ structurally, and may be now known as aveolar, fibrillar, hyaline and laminar adventitious dentines. 3. That the cells called odontoblasts take no part whatsoever in the production of the dentine matrix, and therefore should not be called

odontoblasts. 4. That in spite of the processes which aim at the healing of the pulp after injury (caries), attempts, *i.e.*, on the part of the pulp cells (dento-genetic cells), acid-producing micro-organisms invade the new dentine, proving a source of great danger by continuing their peptonizing influence, and having at least a tendency to bring about suppuration and gangrene in the midst of the pulp tissue. 5. Consequently and finally, that the custom of "capping" exposures of the pulp, no matter how slight they may be, no matter whether traumatic in their origin or not, no matter how carefully or hygienically or aseptically the operation may have been performed, the custom of "capping" exposures, to repeat, is to be deprecated as a routine method of practice, except under absolutely the most favorable conditions it is possible to obtain.

Correspondence

NATIONALIZATION—NOT ASSOCIATED PROVINCIALISM.

To the Editor of DOMINION DENTAL JOURNAL.

SIR,—The discussion which has arisen from a paper by the writer, appearing in the September number of this Journal, has in some measure taken a narrower form than could well have been expected and calls for these lines, written not with any intention of finding fault with the writers upon the subject, but rather with the hope of leading those who now are thinking over the question to a fuller view of what was intended.

Ease of interprovincial registration is certainly a most desirable thing, and the desire for such and its apparent necessity was what caused the writer to look into the matter; but it is only one of several things enumerated as naturally resulting from the establishment of a Dominion Dental Council as proposed. The editorials in this Journal treating upon the article since its appearance have all been headed "Reciprocity between the Provinces," and only one of those writing upon the subject, the President of the Toronto Dental Society, seems to have grasped the larger benefits arising from the nationalization of our professional standards.

The progressive tendency of Canada and of all British colonies to-day is clearly toward solidification of the Empire or "Imperialism" as it is called—for evidence see the confederation of Australian colonies now in progress, or the probable early entrance of Newfoundland into the Dominion. Why should the professions, which contain men above the average in education and intelligence, be behind in this movement? Their place is in the front. We must

get away from the provincial idea and get toward the national idea if we are to cement Canada into the great nation she ought to be and undoubtedly will be, and the professions should be first to move. Let me here quote from *Events*, an independent weekly published in Ottawa. Its editor, in dealing with the threatened outbreak of racial or provincial animosity, says :

"Is it not possible in some way or other to put an end once and for all to the race cry? Some Ontario papers insist on keeping it up, and some in Quebec are making all they can out of what is said in Ontario. Canada can never grow into a great nation while this nasty sectional strife continues to divide her people. Let us try to deal with all questions on a broader basis than mere parish politics—let a Canadian, no matter what part of Canada he comes from, be at home in every part of this broad Dominion. There are many laws which tend to keep this sectionalism alive that should be wiped out. Among them are those governing the learned professions. A doctor fully qualified to treat disease in one province, is guilty of a crime if he attempts to practise in any other, without first having stood an unnecessary examination and secured a new certificate of fitness. The same is true of the dentist, whose professional experience counts for naught if he moves to another province. A friend of mine who is a dentist thought of moving to Quebec, but was prevented from doing so because he would have to spend four more years acquiring a knowledge of his profession in that province, although he has been practising in Ontario for years. This kind of legislation is all wrong, and certainly discounts Canadian citizenship. So far as the professional man is concerned, all of the country which is his is the province in which he took his degree. In every other province he is a stranger in a strange land. Surely this is legislation which is bad for Canada and should be wiped out. What a Canadian has a right to do in any part of Canada he should have a right to do in every part of it. Either his citizenship in the Dominion means something or it means nothing. So far as the professional man is concerned it is not worth anything to him. It is only his citizenship in the province that counts. He is an Ontario or a Quebec man, or a man from some other province. This has its effect in keeping up the race cry and in setting province against province, and it should be ended in the interests of that wider and better citizenship, which makes a man feel that the whole of Canada is his."

The nationalization of professional standards in dentistry means more to us, however, than the full acknowledgment of citizenship and professional standing in any province; it means that when the Dominion Dental Council has been called into existence that the Parliament of Canada will have put its seal upon dentistry as a learned profession. The moral effect of this upon

the people is a thing in itself to be greatly desired, for among other things we could then be assured of the moral support of the people in enforcing such legislation as we hope will lead to the elimination of the quack, and of other undesirable elements that still cling to the profession at the close of the century. It means that Great Britain, unable to treat with us now, coming from the separate provinces, will be glad to welcome us when we have the national stamp upon us. It means that our young men may find not only all Canada theirs as citizens and dentists, but the Empire and all its opportunities open to them. And who will doubt that the ultimate interchange of acknowledgment of professional standards will induce an intermingling of colonial professional men calculated to make the educated classes in all parts of the Empire to know each other better, and to more earnestly and actively desire the further benefits resulting from solidification of the Empire.

S. W. MCINNIS.

Brandon, Man.

DOMINION QUALIFICATIONS FOR DENTISTS.

To the Editor of DOMINION DENTAL JOURNAL.

SIR,—The question of Dominion qualifications for dentists raised by the paper of Dr. S. W. McInnis, published in the September number of the Journal, has started a very interesting discussion, which it is to be hoped will result in some specific action. What is the present condition? By the provisions of the British North America Act the subject of "Education," apparently in its widest sense, was relegated to the provincial legislatures. So far as dental education is concerned, every province has enacted a "Dental Law" which either fixes, or provides for the fixing, of a curriculum in dentistry, which must be complied with before the applicant can enter on the practice of dentistry in the province. Naturally, the standards vary very considerably, and in no case is a qualification obtained in one province good in any other. The same statement holds good in regard to medicine, pharmacy, law, surveying, etc. The effect is to isolate the provinces, develop provincialism rather than nationalism, and to hinder the growth of a broad, comprehensive, national spirit.

From another standpoint a Dominion qualification is equally desirable. Canada is a young country, and its citizens have not yet developed that attachment to locality which characterizes older nations. A Canadian is always willing to change his place of abode if the change gives fair promise of bettering his condition. The present system of purely local qualification prevents professional men from exercising a free choice in this matter. When a young Canadian is completing his professional education it is in

every way desirable that he should be able to secure a qualification which will enable him to make his home in any part of the Dominion.

It is not proposed that a license to practise dentistry in one province should qualify for practice in another province. The standards in the several provinces vary too much to make such a proposal practical. Neither is it proposed to interfere at all with the present arrangement for provincial qualification. What is aimed at is the formation of a Dominion Council, or Board of Examiners, which shall formulate a curriculum and conduct an examination, to which students and practitioners from every province of the Dominion, and from outside countries, will be admitted on compliance with the prescribed conditions. To those successful in examination certificates would be granted which would admit to registration and practise in any province of Canada without further examination. How may this be secured? Manifestly it must be by the approval and active concurrence of the corporate dental bodies of the several provinces. The proposal of Dr. McInnis is to obtain Dominion legislation providing for the formation of a Dominion Dental Council. It must be remembered, however, that Dominion legislation would have no legal control over a dental corporation organized under provincial statutes. The acceptance by these of the provisions of a Dominion statute would be entirely voluntary. Under these circumstances it has occurred to the writer that if the dentists of the several provinces desire a Dominion qualification the simplest and most prompt method of obtaining it would be the formation of a Council by the mutual agreement of the dental corporations of the several provinces, in which each would be represented, and the certificates of which these provincial corporations would agree to accept for registration and admission to practice. The advantages of an arrangement of this kind would be the promptness with which it could be consummated, the facility with which changes might be made by mutual agreement, and without the delay and expense of fresh legislation. If the experiment was not satisfactory the agreement could be cancelled and a return made to the present methods.

A somewhat careful reading of the various provincial statutes relating to dentistry gives the impression that only in the cases of Manitoba and British Columbia would the present laws require to be changed to permit of such an arrangement being carried into effect. In the other provinces the directors or examiners would have power to arrange for the acceptance of such certificates, always assuming that the standard was as high or higher than the one now prescribed by the local law. While it is probably premature to discuss details at this stage it will not be out of place to suggest in general terms what the curriculum

should cover, so far at least as students are concerned—for old practitioners possibly some concessions should be made.

For matriculation a certificate of matriculation in the Faculty of Arts of a good university should be required. As to course of study a continuous pupilage of at least three and one-half calendar years and graduation from a recognized dental college. The examinations should cover all the subjects taught in the best dental colleges.

These suggestions are made for the sole purpose of inviting discussion. All the provincial dental associations or boards will hold their annual meetings before midsummer. If this matter seems to them to be of sufficient importance, representatives might be appointed to meet and discuss the whole question and then proceed either by mutual agreement, by applying for Dominion Legislation, or drop the whole matter as in the premises might seem wisest.

J. BRANSTON WILLMOTT.

Toronto, January, 1901.

Reviews

Carl Wedl's Pathology of the Teeth. Second Edition. Edited by JOSEPH R. VORE METNITZ and GASTAV R. VON WURISCH-HEIM. Published by Arthur Felix, Leipzig.

A very good work of 210 pages, with numerous illustrations. The first Part is devoted to the anatomy of the Superior and Inferior Maxella, followed by the Anatomy of the Teeth. This part describes and explains everything pertaining to the teeth, their arrangement in the jaws, with a minute description of each tooth, both temporary and permanent, as also a description of the formation and composition of them, devoting a chapter to each. The dentine, enamel, cement, pulp, pericementum and jaws. The development of the teeth and jaws in embryonic life is treated in a masterly manner, so also are the chapters on first, second and third dentition. The last chapter of Part I. treats of the growth of the jaws. This chapter deserves special mention. Part II. deals with the Pathology of the teeth, commencing with anomalies of tooth formation, of their number, of their position and of their construction, followed by retention, union of teeth, and ending with odontome (malformation). This book is well gotten up, showing that the authors have thoroughly studied the subjects and carefully compiled them in a concise and readable manner. It is printed in clear type, and should be in the library of every German reading dentist.

CARL E. KLOTZ.

St. Catharines, Ont.

Dominion Dental Journal

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No. 2.

TORONTO UNIVERSITY UNDERGRADUATES' CLUB.

An Undergraduates' Club has been organized with quarters in the Deans' residence, which is to be fitted up and furnished at a cost of \$3,000. The greater part of which has been subscribed by the faculties of the University and affiliated colleges. The faculty of the Dental College has appointed Drs. Clark and Webster as a committee to act on its behalf.

The club has for its object the improvement of the social relations of the students of the affiliated colleges. Besides furnishing at a reasonable cost a place where students may find comfortable surroundings, pleasant amusements, good reading and congenial company, this club will have the effect of drawing the students of the various colleges closer together and fostering acquaintances that will be lasting and beneficial to all parties.

Of the students who have graduated from the Royal College of Dental Surgeons of Ontario in the last eight years, it is safe to say that 95 per cent. of them received their Doctor of Dental Surgery degrees from the Toronto University, and of all these there are not 3 per cent. of them who entertain any filial feelings towards the institution that granted them their degrees. This should not be. Graduates of any institution should have an interest in its future welfare, and every institution should have some interest in its graduates other than a financial one.

This club will tend to draw the dental students attention to the fact that they are undergraduates of the University of Toronto, and will some day be numbered among its alumni, thus stimulating in them an admiration for an institution of learning that has done so much for education in Canada. The University authorities will also be more likely to realize the fact that they are graduating dental students as well as receiving their fees. No movement among the affiliated colleges of recent years will have any further reaching effect than this one, provided the club becomes a popular resort for the students.

ELECTRO GOLD PLATING.

Having been asked several times to explain the method used in the college for gold plating regulating appliances, it was thought better to give a description of an appliance that is applicable under all circumstances and that is comparatively cheap, easily obtainable and set up. The college appliance is simple, but much more complex than is necessary for an ordinary dental practice. In a college it is necessary to have appliances that are permanent and that cannot be very easily put out of order.

A one and a half volt dry cell, that is ordinarily used for electric bells about a house, will generate sufficient electricity; two pieces of copper wire (ends of which are attached to the poles of the cell) long enough to reach the vessel containing the plating solution; a porcelain or glass dish or cup that will hold about a half-pint or pint, being three inches in diameter with parallel sides, is the outfit. In this dish is placed a fully saturated solution of cyanide of Potassium in water. A piece of gold is attached to the end of the wire from the positive pole, while the metal to be plated is attached to the end of the wire from the negative pole, both the gold and metal to be plated are now immersed in the solution, but not allowed to come in contact with each other. If plating is going on there will be an activity about the metal upon which the gold is being deposited. There is a good deal of detail and experience needed before plating can be successfully done even after the appliance for doing it is perfected.

German silver must be well polished or the plating will be imperfect. The gold plating will only be as perfect as the polish on the surface of the article to be plated. After the polish comes the cleaning. All traces of grease or dust must be removed from the surface to be plated. A solution of caustic potash, 1 oz. to the pint of water, when heated, will remove grease in a few minutes. When the article is removed, brushed and washed in water, it may be put into the gold bath.

One of the most frequent causes for trouble with a plating appliance is coating of the copper wires that are suspended in the cyanide solution, thus interfering with the current.

Plating goes on more actively in a warm solution than in a cold one. The distance the anode is from the cathode will have an effect on the activity of the plating. The size of the anode as compared with the cathode also effect the rapidity of the plating. If the cathode be rapidly agitated it has an effect on the color of the plate. Too strong a current will blacken. If the plating goes on too rapidly the gold will be deposited on the surface of the cathode brown or black in color, according to its rapidity, and if too slowly deposited the plate will be of a highly copper color.

In recommending the plating bath to be a saturated solution of cyanide of potassium, we are quite well aware that a gold chloride solution in cyanide of potassium is advised, but in practice it is found to be unnecessary. The gold chloride solution is expensive and seems to be so easily spoiled that we found it to be a nuisance in the college and so discontinued its use. The cyanide solution seems to serve every purpose.

If the cathode comes out of the bath dark in color, the gold color may be brought out by polishing. But first it must be dipped in water and allowed to dry.

DOMINION DENTAL REGISTRATION.

In this issue is published two communications on the subject of Dominion Dental Registration from the pens of two gentlemen whose positions and attainments fit them to write on such a subject. Their opinions and conclusions are worthy of more than a passing interest. It is hoped that these writings will stimulate other progressive dentists to express their opinions upon this subject, which should be of very great interest to us as dentists and as Canadians. The columns of the Journal are always open to any one who wishes to discuss this or any other subject that is of interest to the dental profession of Canada.

ROENTGEN RAY IN DENTISTRY.

A Roentgen-ray apparatus has been recently added to the equipment of the Dental College in Toronto. The Board of the Royal College of Dental Surgeons of Ontario very promptly supplied an X-Ray outfit as soon as its usefulness in dentistry was established. We take no small pride in the fact that a Canadian has done more than any one else to show how to use the Roentgen-ray in the diagnosis of dental troubles. We refer to Dr. W. A. Price, of Cleveland, who received the thanks of all nationalities for the very able paper and demonstrations given at the International Dental Congress at Paris. Dr. Price will give similar demonstrations to those given at Paris at the clinic of the Toronto Dental Society,

February 25th and 26th, 1901. It will be a privilege not often to be enjoyed to see demonstrations of the X-Ray by one who is admittedly so competent to do it.

Editorial Notes.

Dr. J. W. GRAY, 'OI, spent a day in Toronto in January.

Dr. McDOWELL, Listowel spent a day or two in Toronto, recently.

Dr. J. A. FLEMING is to be congratulated on his election to the town Council of Prescott.

Dr. SYLVESTER MOYER was elected alderman at the recent municipal election in Galt.

TRY papain to digest the contents of fine root canals, so as to facilitate their proper cleansing.

Dr. and Mrs. CUNNINGHAM, Parry Sound, were visitors at the Dental College early in January.

DR. F. J. CAPON, of Toronto, gave a clinic on porcelain contour filling with wire retention at the Alumni Clinic of the Chicago College of Dental Surgery, January 24th, 1901.

"No doubt every dentist who has used sulphuric acid to enlarge fine root canals has found a difficulty in the destruction of his broaches by the acid. If nitro-hydrochloric acid or "aqua regia" be used, the broach is not so readily corroded, and besides there is an effervescence in putrescent canals that assists in carrying out the debris and a liberation of chlorine that bleaches the tooth."

Obituary

DR. J. G. SUTHERLAND.

Died January 13th, 1901, at his residence, Alliston, of liver disease. Dr. Sutherland was born in Simcoe County forty-nine years ago, and was the son of the late Benjamin Sutherland. He practised dentistry in Alliston for twenty-seven years, and during that time held many important positions in the gift of the public. He was a justice of the peace and was for years a town councillor, and as Reeve of Alliston sat in the Simcoe County Council for two years. He is survived by his mother, who lives in Alliston, and two brothers, Mr. D. H. Sutherland, of Alliston, and Mr. W. Sutherland, Barrister, of Toronto, and one sister, Mrs. Samuel Carswell, of Bradford.

Dominion Dental Journal

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No. 3.

Original Communications

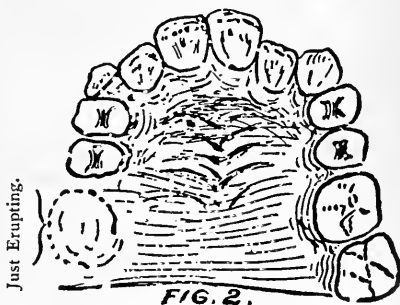
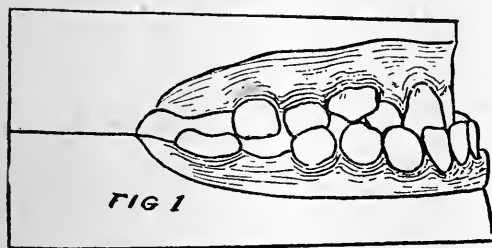
AN ORTHODONTIA CASE.

BY HERMAN McLELLAN AND W. L. TAIT.

At Royal College of Dental Surgeons, Toronto, 1900.

Patient, Irene A. —, aged 12. Presented about December 1st, 1899.

Diagnosis.—Occlusion and arrangement of teeth as Figs. 1 and 2. There appeared nothing abnormal about lower jaw. Upper arch seemed very small as compared with lower; patient lisped

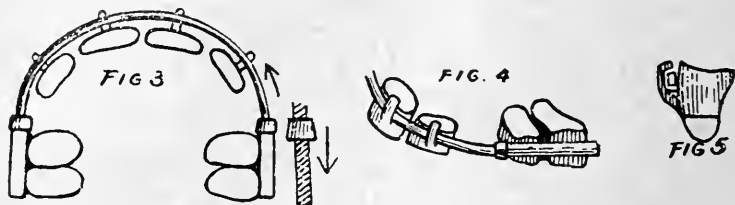


badly, as if sufficient space did not exist for tongue, and upper lip seemed very much fallen in and small. From these symptoms we decided it was a case of "Inlocked Upper" rather than lower protrusion.

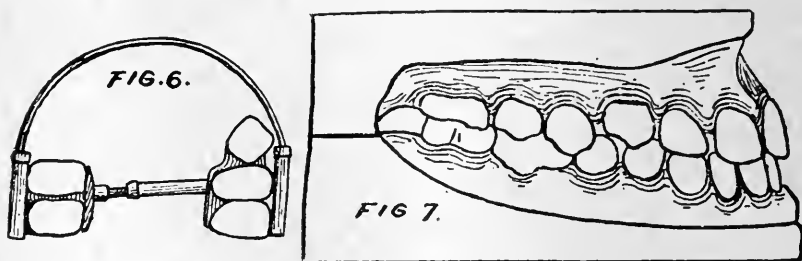
Etiology.—Patient said it was caused by sucking thumb, and also a habit of sucking crackers, etc., in roof of mouth. We saw two of her sisters and their upper anterior teeth showed a tendency to be not very well occluded over lowers, and it is possible that from this condition to start with, the above-mentioned habits would produce the condition as presented.

Treatment.—The whole upper arch, posterior as well as anterior occluding inside lower, the object was to increase the circumference of the arch in every direction.

Appliance.—(a) We decided to move the four incisors into place and then expand the arch. The two bicuspid were banded on each side, and a tube soldered on the buccal of each pair. An alignment wire of No. 7 (Martin screw-plate) was prepared. A

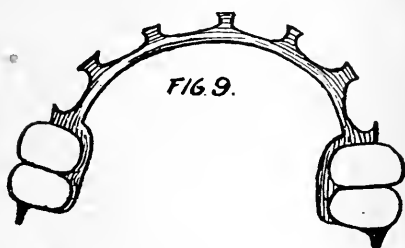
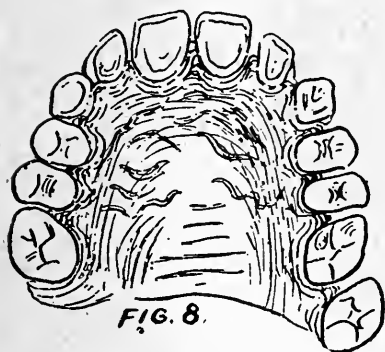


thread was put on each end and nut screwed on. The threaded ends were inserted into the tubes, having the nuts mesially. The four incisors were banded, and hooks were soldered to the labial surfaces which hooked over the alignment wire. Figs. 3, 4 and 5 show the different aspects of the appliance. By screwing the nuts distally the alignment wire was forced anteriorly, carrying the incisors with them. The appliance was put on December 12th, 1899, and the incisors moved rapidly forward. By the middle of January we proceeded to prepare for spreading the arch.

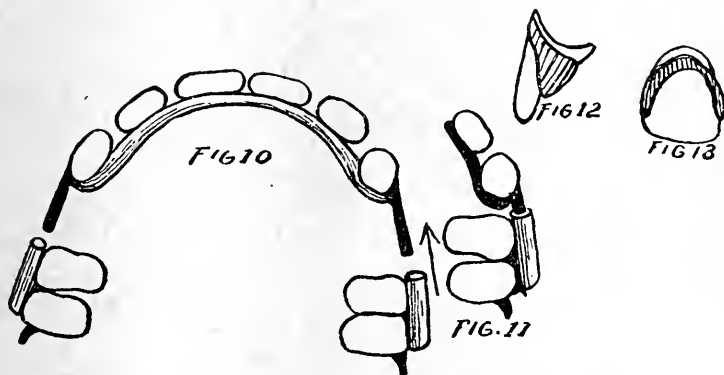


Spreading the Arch.—(b) The original appliance was taken off, and to the left pair of bicuspid bands a cuspid band was added; the right cuspid, having been forced to erupt outside the arch, did not require to be altered. On the palatine these bands were reinforced by a piece of flattened wire, and a jack-screw inserted between. (Fig. 6.) This appliance, including the alignment wire and anterior bands for retention, was reinserted. The spreading did not take place so readily, as the anterior teeth were moved forward, but by April 3rd we considered the result sufficiently satisfactory to prepare the retaining appliance.

Result.—When completed, the case was as shown in Figs. 7 and 8. The upper arch, with the exception of the left upper first molar, occluding outside the lower. Owing to the very great increase in the circumference of the upper arch the anterior teeth were considerably spaced. The teeth operated on were consider-



ably tipped outwards, but owing to lack of time we postponed the tipping of the roots to get the teeth vertical. This tipping of the teeth apparently shortened them so that they did not come into contact with their opposites as soon as the posterior teeth not treated, which slightly opened the bite anteriorly. The upper left first molar seemed to be the cause of this. The patient's appear-



ance was wonderfully improved, also her speech: the lisp being entirely gone.

Retaining Appliance.—We made an appliance as Fig. 9, all in one piece, with interspaces filled with solder, but owing to the tipped condition of the teeth the circumference at the incisal and molar was considerably greater than the gingival, and the parts for the interspaces being so rigid and unyielding, the appliance

would not begin to go on. We then devised an appliance as Fig. 10, in three sections. We did not fill the interspaces of the six anterior bands with solder, as it was necessary for them to yield to go on. To compensate for this weakness in the bands the whole face was not cut out of them, but were left as Figs. 12 and 13. We fitted these on and found that they went to their places satisfactorily. We cemented the anterior section on first and slipped the posterior sections on to the wires and swung them into place. The appliance was inserted, April 8th, 1900. During the whole course of regulating, the teeth had never been sore until they were left a few days without sufficient support while we were making the retaining appliance, when they became decidedly tender.

CROWN AND BRIDGE-WORK.

By C. A. MURRAY, MONCTON, N.B.

Read before the Nova Scotia and New Brunswick Dental Societies, St. John, N.B., August 30th, 1900.

I wish to acknowledge the compliment paid me in the invitation to present a paper before the association, yet I respond with feelings of the greatest reluctance, knowing, as I do, my inability to present this subject in a way which its merits demand. I do not propose to deal with or illustrate any particular method, but to treat it in a general way. Since I have been asked to present this subject before this meeting the time has not been at my disposal to prepare any specimens by which any particular method could be illustrated. I think no one will contradict the fact that crown and bridge-work has been a great blessing to the profession. It has been the means of educating men engaged in the construction of the work to a point nearer to perfection in this mechanical art than has ever before existed in the dental profession. It has also served as a stimulus to the inventive capacity of dentists, as is easily demonstrated by the vast number of methods now practised of inserting artificial teeth without plates. By its adaptability it restores most successfully the lost parts, and fulfils the requirements of that great necessity: mastication. It is not the advantages alone, however, that should occupy our consideration and attention, but more particularly the difficulties that each individual case presents. There is no unchangeable law or mode of procedure for each particular case, and as there are no two cases that present themselves under the same conditions and circumstances, we, as progressive dentists, should have a thorough knowledge and comprehension of the fundamental principles that govern this work, and at the same time a faculty to overcome emergencies as they may

arise. Besides being competent to successfully treat a tooth or adjust a band accurately, and to properly finish or set a bridge, there are still other factors of vital importance, and to a great extent ignored by very many dentists, which should enter into the careful consideration of every case. These very important factors are force, strength and resistance, all of which are so very closely related to each other that a disregard to any one of them endangers and acts detrimentally in reference to any of the others.

Resistance may be considered as confined partly to the bridge, and more particularly to the abutments. The element of strength lies practically in the bridge itself, while that of force and its directions consists in the amount of pressure exerted in bringing the jaws together, and in the character of the articulation. Natural as well as pathological lesions present themselves in such a variety of forms that these elements necessarily differ relatively, in a marked degree in nearly every case, and failure often results from a lack (superior power) of one over the other. To make this clear let us suppose a bridge is to be constructed and placed upon weak supports without any occluding force, the probabilities are that this bridge would stand for an indefinite time; but if, on the other hand, the occluding force should be strong, or of an abnormal character, the results would be far less favorable, and success would vary in proportion as the opposing forces varied.

There is still another point that suggests itself in this connection, and that is the direction of the force. Bridges of sufficient strength, and abutments equally firm, that are capable of resisting any direct or normal pressure are oftentimes torn to pieces by an indirect force, and sometimes these forces are often created by an irregular articulation. One of the most disastrous of these indirect forces is where the jaw is moved forward or sidewise against the bridge as a lever. So many complicated cases arise where the conditions are so different that each one requires a special study, not only in a physiological sense but practically from a mechanical point of view, so that the bridge will present a perfect comprehension of the harmony that should exist between those powerful opposing elements already referred to. There are certain prescribed limits wherein we are allowed to operate, and so soon as we understand and comprehend the principles and laws that should govern us within these limits, and the failures and disasters that await us without, we shall have made some progress in the future development of this most interesting work.

During my experience I have found very few patients who had occasion to speak disparagingly of the results obtained, although a great number of cases were so badly conceived that the effect, as well as the stability, of the work was compromised from the outset, and naturally the outlook was anything but gratifying.

This lack of judgment can be accounted for in the same respects from the fact that some of the work was performed by operators who supposed they knew everything about the work, but in reality were only novices and hardly knew the first principles of the art. I have seen bridges where they are anchored in adjoining teeth by means of fillings either of silver or gold, and were the first to show signs of weakness or failure. It is impossible to suppose that a crown approximal cavity of fairly good proportions can support the strain of mastication that is exerted on one or two additional teeth when experience teaches that fillings in similar positions and of similar dimensions often break down by the force exerted upon them. There is always a certain amount of movement to the teeth to overcome, and the security that this mode of anchorage affords is not sufficient, and either the filling loosens or the bar becomes detached; but this class of work in some cases has been successful where the occlusion is slight or wanting. There are also other cases where one or more dummies have been extended from the bridge proper, forming levers that multiply the natural occluding force, and which no support can withstand the pressure. There are also many other cases that have come under my observation, and to my mind have proven failures, but time will not permit me to deal with them at the present; but in conclusion of this I must say, after a thorough investigation of bridge-work as a whole, and prepared and adopted by competent men, and from my personal practical experience I have no hesitation in stating that there is no form of replacement that can approach in appearance, comfort, and utility, that of a well-conceived, proportioned and constructed bridge.

THE REMEDY.

BY GEO. K. THOMSON, D.D.S., HALIFAX.

Read before the Nova Scotia and New Brunswick Dental Societies, St. John, N.B., August 30th, 1900.

Instead of reading a paper on "Pulp Treatment," for which I am on the programme, I will ask your permission to express briefly some thoughts which have occurred to me from time to time, in regard to our professional status.

It is a subject which has been very much discussed in the leading dental societies of the world, and as a result of those discussions there have been set in action powerful forces, which are to-day working out for dentistry a high destiny. I therefore hope that a discussion of the matter here to-night may give rise to some distinct forward movement in the Maritime provinces.

In a very concisely-written article in the DOMINION DENTAL

JOURNAL, Dr. Frank Woodbury remarks "that there is an undercurrent of feeling among medical men that the dentist is not a specialist in medicine in the same sense as the ophthalmologist or aurist," and asks for a remedy. In our "Code of Ethics" it is stated that "dentistry is a specialty of medical science."

I have never been able to understand, nor do I yet understand, why we consider ourselves specialists in medicine, in the same sense as the aurist and ophthalmologist. The aurist and ophthalmologist take the full course and degree at a medical college, and sometimes practise general medicine for several years before taking a post-graduate course in their specialties; they practise under the same law as the M.D.'s; they are members of, and hold important offices in medical societies. (One of our leading eye, ear and throat specialists in Halifax, is a very prominent member of the Nova Scotia and Maritime medical societies, and president of the British Medical Society; another, a dermatologist, is an active member of these societies and editor of the *Medical Brief*) and last but not least, they render their services and charge for them in a professional manner.

The dentist, on the other hand, as a general rule does not take the full course of studies at a medical college, and a medical degree; the law under which he practises is separate and distinct from that of medicine; he is not even a member of the medical societies, and it is an exceptional case where he is invited to attend their meetings. It is also an exceptional case where we find a dentist who charges professionally for services rendered.

The section in our "Code of Ethics" which states that dentistry is a specialty of medical science is quite correct, as the study of medicine to a certain extent is quite necessary to the intelligent practice of our profession. There are also good grounds for the undercurrent of feeling among medical men that we are not specialists in medicine in the same sense as the aurist and ophthalmologist for the reasons stated above, and we cannot expect to be recognized in the same way, unless we take the M.D. degree, or unless our colleges are reorganized so that dentistry will be taught as a specialty in medicine instead of a distinct profession.

It may have been a mistake for Dr. Chapin A. Harris to have founded dentistry as a separate profession, when the authorities of the Maryland University refused to allow the establishment of a professorship of dental surgery in their medical department; but the fact remains, and with the establishment of the first dental college, a new and distinct profession was born, and that profession was Dentistry.

Our dental colleges of the present day provide very liberally for the medical education of the dental surgeon, but judging from the papers which were read and the resultant discussions at the last meeting of the Dental and Oral Section of the American

Medical Association, the consensus of opinion is that our dental colleges must either give a still broader medical education in connection with dentistry, or the aurist, ophthalmologist, dermatologist, dentist and other specialists of medical science must be taught in the same schools, with different clinical and laboratory instruction in the advanced courses.

In an editorial in the last *Dental Cosmos*, Dr. Kirk offers the following as suggestive of the sphere of study and action which may be properly included in dentistry, viz., "Dentistry—A specialty of medical science embracing the structure, function and therapeutics of the mouth and its contained organs, together with their surgical and prosthetic treatment."

Dental education is, slowly but surely tending towards the establishment of medical universities which will include, in their curricula, dentistry as a specialty of medical science in the same sense as the aurist, etc. When that is accomplished we may hope that it will prove an efficient remedy for the feeling of which Dr. Woodbury speaks, and that the question of our status will be settled forever. In the meantime, we in the Maritime provinces, can do much towards the elevation of our profession, both in the minds of members of other professions, and of the public. We can conduct our practices in a more professional spirit. Instead of treating cases where consultation should be held, let us call in a brother dentist for consultation, as is the practice among our medical brethren in such cases. Let us exchange ideas in regard to our methods more freely. If we have good ideas which are not generally known let us spread them abroad either through the medium of the dental journal or society, so that the public may ultimately reap the benefit of them.

Let us impress our patients with the fact that we stand on an equal footing with other specialists in medicine, and let our manner towards them be that of professional gentlemen. In our charges let us be reasonable and just, but professional, our first thought being for the performance of an operation to the best of our ability, regardless of time consumed, and the fee a secondary consideration. A dentist is the best judge of the value of his time, and his success or failure in practice will depend largely on whether or not the public agree with him in his valuation. There is no more reason why the dentist should render an itemized account for services rendered than that the medical man should do so, and a great many people only expect it because it has been the custom. Fortunately, in our provinces by the sea, we are not overrun with the advertising quack; but if those who do advertise have any professional feeling, let us appeal to that, and try by force of example to influence them so that they may desist from such unbecoming methods of attracting the public.

Further, Mr. President, the young men who are graduating

annually and coming to our provinces to practise should be encouraged to take a more active part in our association work. Maritime and Dominion dental associations are organizations which we may hope to see in existence in the near future, also, later, affiliation with our medical colleges, and reciprocal registration throughout our Dominion as well as in Europe. Why should not we in the Maritime provinces take the initiative and set the ball rolling towards such desirable objects?

IMPRESSIONS FORMED OF DENTISTS AND THE DENTAL PROFESSION OF EUROPE.

BY W. M. WUNDER, D.D.S., TORONTO, CAN.

Read before the Toronto Dental Society, December 12th, 1900.

Our president, Dr. Webster, gave a paper on "New Ideas Gathered at the Dental Congress." He wishes me to give some impressions I formed of the dentist and the profession of dentistry while abroad.

I shall not attempt to give a paper, but shall simply enumerate some of the points that struck me forcibly. A dentist going alone on a tour of almost three months, as I was, would be very much pleased, on getting out of his berth in the morning at Montreal, to find sitting opposite to him two dentists whom he well knew, going on the same boat. He would also be pleased to find the profession of dentistry more largely represented on the boat than any other profession, except that of teaching, there being eight dentists on the list of 250 passengers.

The good-will and the freedom in the interchange of ideas on the voyage received a check when the office of the dentist abroad was visited. I visited dentists in England, Ireland and Scotland and in each case was met with a marked reserve, an attitude very different from that of the dentist in either Canada or the United States. The dentist in each case seemed to fear you might learn some of his methods of practice and seemed to guard these as would a manufacturer his trade secrets. All over one noticed the scarcity of dentists and the appalling necessity for their work in the mouths of the people whom we met.

In Switzerland, Germany and France, one seldom came across a dental office, and it was only with some difficulty one might be found. I noticed a desire to have offices in retired and somewhat unfrequented situations, and a desire to hide, as much as possible, the work of the dentist, the glare of gold crowns being very seldom seen. In London, however, we found the ever-present

advertising so-called American dentist. His prices advertised in enamel letters on the windows (regular Boston dentist style) were: Extracting, 1s.; plate vulcanite, 3s. up; silver fillings, 4s., etc.

The samples of bridge-work displayed in front of some of these places would not do much credit to a six-months' student.

I came home to Canada with a higher regard for the profession of dentistry than I have ever had. Can the adjectives *grand* and *noble* be applied more appropriately to any other profession? The physician, regardless of money, professes to practise simply for the good of the race and to prolong life; the newspaper man printing articles only in the interest of the public; the politician leaving home and friends and ease for the welfare of his country alone; the merchant having daily sacrifice sales and selling always below cost simply that the people may get cheap goods—and all other callings. Is there any of these who prolong life and increase happiness as much as the unlauded dentist, whose best work is hidden from the public gaze. When we see the young, old-looking women, in some of these countries, and the mumbling old man at sixty and sixty-five, we are bound to say that without the aid of our profession our young ladies would be as faded flowers at thirty, and our sturdy old men of seventy and eighty would be mumbling, decrepit and dyspeptic.

DENTAL ETHICS.

BY JAMES HOGGAN.

Read before the Royal Dental Society, Toronto, December, 1900.

Has this vocation, this mode of livelihood, a right to be called a profession? This is a point disputed by a great many people of to-day outside of the dental profession.

We, as students, pass through a preparatory course, that makes us undergraduates of Toronto University. If we do not enter this college as students of dentistry, we are looked upon as matriculants in Arts, and as such are eligible in good society. If we take a further course of three and one-half years in the science of dental surgery we loose caste.

Under such existing conditions, does our dignity warrant the use of a degree? Does a degree become us? A degree is an appendix to our name, indicating a certain proficiency in some branch of science. In ancient days, the custom was to reverence any man who had by his own effort won for himself a degree. To-day there are men right here in Toronto who wish to be so distinctive from such as we that they have dropped the use of their own degree.

In the palmy days of long ago, a man gave his life to his profession. He cast not a thought for the morrow. It was proper,

it was justice, that an heiress should be found whereby she might devote her fortune to a noble cause.

In this age a man thinks not so much how he may advance his profession as how much he can make out of it in a financial way. He gives over invention and research for fear of the struggle.

Now, gentlemen, has our profession—this profession we have striven or are striving for this number of years—a footing upon a level with other professions, *e.g.*, Arts, law, medicine? Its present recognition seems doubtful. Ten years ago it was looked upon as a possible profession. Before that, a decade or so, if you were doing a lucrative advertising practice, it was looked upon as a prosperous business; if you were engaged in an honest professional practice it was considered a trade; but since that time, the pioneer days of our college, it has become a science. Members of other professions find it necessary to seek our advice upon principles involved in our work that have confounded them.

This science has been instrumental in so saving and promoting life, in so beautifying and renewing youth, that we ourselves have come to look upon our source of trade and commerce as patients.

If our professional standing is doubtful at the present time, it will soon have to be decided; it is reaching a crisis, and will depend upon the profession as it now is, and upon ourselves as students.

There are almost every species of ass in every profession, but I think the worst is that innate, indifferent kind so common in our own. It does not matter a particle to some dentists whether we have a social position or not. But, also, we have in our ranks some of the grandest and noblest of men: men who are making super-human efforts to attain a professional recognition, and these men are succeeding by a healthy progress to attain that reward which they intrinsically merit, a recognition upon a level with the best of other professions: a place among the men of the nation.

There was a day when dentists sprang from anywhere. Now they rise from the same flesh and blood as other professions; they are reared in the same atmosphere, instilled with the same ambitions, pass through the same preliminary course choosing any of the professions; we choose dentistry, our brother chooses medicine, our sisters are found in the girls' seminaries, conservatories and universities. We all acquire an intimacy with the same social world. Ten years ago we had not the freedom of the 'Varsity games' contests, nor was it possible to form an Intercollegiate Athletic Union. University men shrugged their shoulders. Now we run the campus with the same object in sight.

Five years ago the Students' Undergraduate Club at the University would have been too exclusive for us; now it is our privilege to meet and enjoy upon an equal footing the society of the students of any other college. Our friends may be the coming men of to-morrow. If we but cultivate their acquaintance in this

club, the best men of other colleges may meet and know the best men of this college. Does not our present standing demand this?

The professional ethics of our student life require more than that we merely take a good percentage upon the examination papers; it is our duty that we so broaden our views of life that we may be an honor to our degree. It is necessary that we lose that grave eccentricity which so many of us bring to college. If we do not, then the profession just to that extent smacks of the farm.

It is essential that we form good healthy tastes, learn to converse intelligently and to move among people with ease, and by all means form a conception of what good really is. Then when we migrate to those smaller, quieter places of the earth, those towns in which men of college education are the criterions, just there are we watched as such, and if we prove ourselves well-bred our profession is respected. The man makes the profession what it is.

But by all means, gentlemen, do not let us be mistaken in our education. Ruskin has said that in so far as education makes the senses delicate, the perceptions accurate, and thus enables people to be pleased with quiet instead of gaudy color, and with graceful instead of coarse form, and by long acquaintance with the best of things to discern quickly what is fine from what is common, so far acquired taste is an honorable faculty. But so far as this higher education has a tendency to narrow the sympathies and harden the heart, fosters pride and selfishness; so far as it leads people to prefer gracefulness of dress, manner and aspect, to value of substance and heart, liking a well-said thing rather than a true one, and a well-trained manner better than a sincere one, just so far is education adverse to nobility of souls. And withal, gentlemen, with my limited perceptions, I see an era in no dim and distant vista when we shall have raised for ourselves a professional monument more colossal than has been.

THE INTER-DENTAL BAND CROWN.

BY E. W. PAUL.

Read before the Royal Dental Society, Tuesday, January 22nd, 1901.

A band in a crown serves to strengthen the root of the tooth, assists in preventing the rotation of the crown, and prevents the dissolution of the cement holding the pin in the root.

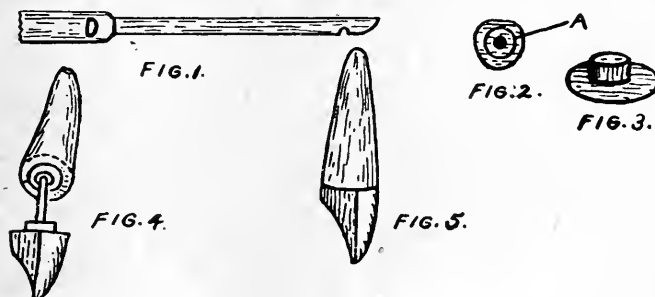
The Richmond crown, with its band encircling the periphery of the root, has some disadvantages which are overcome by the use of the inter-dental band, where applicable. Generally speaking, this band is applicable to the six anterior upper teeth, and the bicusps of both jaws. These objections are: 1. There is great difficulty in securing perfect fit of band. If this is not obtained pathological conditions are often set up which leads to loosening,

and eventually loss of tooth. At any rate, perfect fit or not, the band interferes with the attachment of the soft tissues to the tooth.

2. A band invites the accumulation of tartar, food, debris and bacteria.

3. A band on the outside of a root necessitates the removal of the enamel, which is frequently a painful operation. The fitting of the band often causes considerable pain.

In making the crown you prepare the root by cutting it down to a flat surface below the gum all around. Do not remove the enamel, as it preserves the natural contour of the gingival margin of the gum. Then ream out the canal just sufficiently to accommodate the post, being careful not to enlarge unnecessarily. With a trephine (Fig. 1) which can be secured in assorted sizes, or a very fine fissure burr, cut a groove (a) around the opening of the pulp-canal about midway between the periphery of the canal and the periphery of the root, just deep enough to accommodate the width of band you desire. (Fig 2.)



Make a band of gold to fit into this groove and solder it to a disk of gold or platinum. Burnish the disk to face of root with a piece of wood, the outline of the root will be clearly shown, to which you can trim. (Fig. 3.) Now puncture the cap, insert a square post into root-canal, remove and solder the cap to the post. You then proceed as in ordinary crown by fitting porcelain facing, backing, and soldering it to place. Figs. 4 and 5 show finished crown. It is claimed for this crown better results where it can be used, but small and flat roots hinder its application. But where used we secure a smooth-joint and perfect adaptation, strength of the root, protection to the cement, non-irritation of the soft tissues, perfect alignment with the surface of the root, and the possibility of the rotation of the crown reduced to a minimum.

This inter-dental band may be used in conjunction with the Logan crown by fitting a band and cap to the face of the root, and a disk of gold or platinum to the end of the crown. Place a little wax between the disks and press the crown to position. Remove the crown with inter-dental band. Invest, remove the wax and fill in the intervening space between disks with solder.

ODONTALGIA.

BY R. J. McDONALD, TORONTO.

Read before, the Royal Dental Society, Toronto, January 22nd, 1901.

The subject of odontalgia is one which may appear very simple and possibly so common that one might think it a waste of time to discuss it; but when one considers the extreme pain one has to suffer at times and also the great difficulty which is experienced in giving relief, it makes us feel the necessity of becoming better acquainted with every method which will cure or assist us in relieving our patients of this most painful of pains.

All toothache, as you know, is caused by an inflammatory condition, brought about in one way or another. It is claimed that a physiological or healthy pulp has no sensation whatever. If there be the slightest uneasiness in this tissue, whether it be mild or very violent, it is a sure sign that a pathological condition exists, and it is the duty of the dentist to relieve the patient by curing the diseased member. The only sign of anything wrong may be sensation caused by thermal changes, or it may be an undecided, constant uneasiness, or a sharp, darting pain. These are all characteristic of inflammation of pulp and indicate the various stages: 1st stage, condition of irritation, hyperemia; 2nd stage, with infiltration and diapedesis, accompanied by continued pain; 3rd stage, congestion, indicated by slowing of blood; and last of all, stasis complete stoppage of blood current, and is evidenced by complete insensibility.

Possibly the most common cause of this trouble may be the exposure or near exposure of the pulp, on which pressure has been caused by food being forced into the cavity by the process of mastication. This is sometimes very severe, but in most cases is easily relieved. The cavity is washed out well with warm water, and as soon as the foreign substance which caused the pressure on the pulp is removed the patient gets relief and may not be bothered again till a similar condition is brought about.

Oftentimes the teeth may ache from contact of sweet materials, and in such cases, as a rule, may be easily relieved by the use of some alkaline wash, directed into the cavity by a small water syringe.

In the case of a jumping, throbbing ache, it is as a rule quite easy to relieve for a few minutes and then it may return worse than ever. A great many use cocaine in this connection, and it will usually relieve for a short time, but not for long. Carbolic and creasote have been pet remedies for years, and while in most cases these may answer, still they are not always effectual. Carbolic is a local anesthetic and is very helpful, while creasote has no

anesthetic properties whatever, and as it does give relief, accomplishes this by the property which it has of coagulation, thus forming a film over the exposed pulp and protecting it from atmospheric influences. The two ways of relieving odontalgia by remedies, are, first, to use some remedy which will protect the pulp by forming a film over it ; and, secondly, by using a remedy which will obtund or paralyze the terminal ends of nerve filaments. Now it seemed rational, since these two methods are admittedly the best ways of giving relief, if we could find some remedy which would possess both properties we would have an ideal remedy. Now carbolic acid is a good coagulator and also an excellent local anesthetic and it is perhaps the best single remedy to be used in relieving patients of toothache. Resorcin is also an agent which is a good coagulator and also an anesthetic. It is also a good germicide. A great many remedies will relieve a patient of odontalgia if the cavity be simply washed out well with water at the temperature of the body, and the agent applied at the same temperature. Now, if these remedies were applied at a temperature of several degrees above or below the body temperature, they would prove to be irritants. All remedies should be used as near the body temperature as possible.

It is often the case that patients will try to get relief by the use of carbolic or creasote and as they have no proper means of applying them they will get on lips and cheeks, and when they come to have the tooth treated by a dentist they will have their faces so burned that the mouth can hardly be opened and therefore it may be very difficult to get access to the seat of the trouble. In a case of this kind it is always well to paint the burned part of the face with vaseline, so that when the mouth is opened it will not cause too many breaks in the mucous membrane of the lips, and then proceed to locate and cure the pain.

It is sometimes the case that a patient cannot exactly locate the real source of the pain and will be positive that it is in an inferior tooth when it is really in a superior, and *vice versa*. It is seldom, however, or never, that the patient thinks it is in the left side when it is really located in the right side.

In a case where you have used the various remedies to give relief and to no avail, it is often accomplished by simply taking a real sharp instrument and puncturing the pulp, thus allowing a small quantity of blood to escape and relieving the pressure in that tissue. Some men say, why not devitalize the pulp at once. I will not discuss the advisability of placing the devitalizing film upon an aching pulp, or of first getting it to a state of quiescence ; but it is pretty safe to say no pulp should be destroyed if it can be kept alive, and particularly in the six anterior teeth, both above and below. This is especially so with regard to young patients, and especially in women, for it may be of little moment for a man to

go through the best part of his life with a discolored tooth in the front of his mouth, but to a woman it would be a cause of a great deal of vexation, and in the teeth of children the pulp should never be destroyed if it can be in any way avoided, as the chance of saving them by devitalizing is very doubtful, as the roots may not be fully formed and so could not be satisfactorily filled.

The best agents to use in protecting the pulp are those which are not freely soluble in water. Those that are freely soluble may answer for a very limited time ; but as the saliva gets access to them they are dissolved out, and the pain returns in a short time. Cocaine is easily soluble in water and carbolic is fairly soluble ; now if you use cocaine or even carbolic it is essential that you use with either of these some oleaginous dressing which will not be dissolved by the saliva. It is very necessary that your stopping material be of such a consistency that it may be applied without pressure. Gutta-percha is not very useful in this respect unless it be dissolved in chloroform and applied on cotton, in which case it is very satisfactory.

Cases had been cited where we have an exposed pulp through the ravages of pyorrhea alveolaris, where the tissue and alveolus have been destroyed, and we have an exposure at the apex of the root. In this case the only remedy is to destroy the pulp along with the treatment of the disease and relief will be had almost at once.

Then we have odontalgia resulting from the growth of some sort in the pulp canal. In these cases it is very difficult to diagnose and may best be accomplished by exclusion. This is done by separating out two or three teeth at a time by the rubber dam, and testing each one to see in which one the inflammatory condition exists, when the cause of the trouble is found it is claimed the pulp should be devitalized. Oftentimes pain may be felt in a tooth which has a large filling in it and after removing the filling it is found that the pulp has been exposed, the cause of this being that some decayed material was left under the filling without being properly disinfected, and as might be expected the destruction of tooth tissue is carried on by germs which operate without the presence of oxygen.

A great many claim that campho-phenique is the ideal remedy for relieving persons of toothache, and it is very good. It consists of equal parts of carbolic and camphor. The coagulating property is nearly all gone, but the anesthetic property still remains, and being insoluble in H_2O it makes a splendid dressing.

One of the best and oldest coagulating agents used is nitrate of silver, and it is a splendid remedy for protecting nearly exposed pulp. Its tendency to discolor everything it touches is not so detrimental as some think, as the stain on hands caused by its use may be overcome by the use of ammonia and iodine or cyanid potassium. Every toothache cannot be cured by local

application. Take, for instance, in the case of poorly-nourished and anemic persons, living in very close and unhealthy houses and being greatly run down. The pain in the teeth of such cannot be cured as a rule by local application, at least not independently, but these must be given good nourishing food along with some good tonic, so as to put their blood in good order and then no difficulty will be found in giving them relief. It is very often helpful in cases of worn-out and over-fatigued persons to give a drug to induce sleep and when they have rested well, as a rule there will be no trouble in stopping the pain.

TECHNIC OF ORTHODONTIA.—NO. I.

Lectures delivered by A. E. WEBSTER to Junior Class, in the Royal College of Dental Surgeons of Ontario. (Reported by Miss Sennet. Diagrams by Mr. Garvin.)

The technic of orthodontia is all the work in this department that the Junior class is expected to do this year. We hope to make it as concise and systematic as possible. The new draw-plate screw and gauge plate and nut dies, devised by Dr. Case, systematize the technic of orthodontia very much. Formerly there were so many standards of measurements used that they were very confusing to the student. We had Brown & Sharpe's gauge, Martin screw-plate sizes, draw-plate sizes and thousandth of an inch. In future we will use but one standard of measurement, Brown & Sharpe or American standard gauge.

Before beginning this work, each of you should have a hacksaw, blow-pipe, Bunsen burner, saucepan or bowl, silver solder and what is known as soft solder, and a pair of Case soldering tweezers. Here are two soldering tweezers designed by Dr. Case, with wooden handles, that are, perhaps, about as good as we can obtain; they are about thirty cents each. The soldering pliers that will serve your purpose, perhaps, might be made from the ordinary soldering tweezers. These small soldering tweezers may be bent in such a shape on the point that they will serve almost every purpose. You know, of course, they soon get warm in the handles when used, while those having wooden handles are very convenient and save the time of cooling off the handles. Then you need pinching pliers, such as you see here. These are not very well adapted for our purpose, but they are the best we can get in the city. We hope before the season is over to be able to get you a very much better pair of pliers for pinching bands. Then you need wire bending pliers; those, perhaps, you already have. These half-round pliers serve that purpose very well. You require a pair of shears for this work, perhaps shears with bows are as convenient as any you can find.

You require to have a Case screw and gauge-plate such as you see here, which can be obtained at the office for three dollars. (Fig. 1.) On these screw-plates there are eight holes, and the same number of slots for measuring the wire, thus making a gauge-plate according to the American standard, Brown & Sharpe. (If you bought a gauge-plate from any dealer in this city, they would charge you in the neighborhood of five dollars. Wholesale price, I think, is two dollars and fifty cents). On the opposite side of the gauge-plate you will see another gauge-plate for measuring gold plate, which is different, of course, from wire, so that you have two gauge-plates worth two dollars and fifty cents each and you have a screw-plates thrown in, too, for three dollars. You will require, also, a nut die. (This you will not need to buy; it will be supplied by the College. We have two sizes of nut dies). We require, also, a Case draw-plate. (This will be supplied by the College. Through the kindness of Mr. Temple we are able to present you with every style of raw material you may require for your technic work. He will be able to supply every demand.) You will require about six

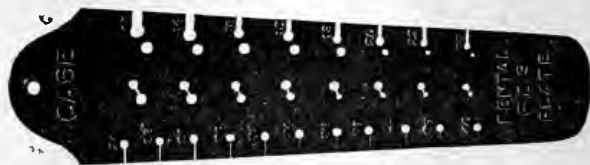


FIG. 1.

inches of German silver wire, No. 9, Brown & Sharpe gauge; one foot of No. 11 German silver wire, B. & S. gauge; about one foot of No. 13 B. & S. gauge German silver wire; German silver plate, about six inches square, No. 28 gauge; German silver plate, about two inches wide by one foot long, No. 32 gauge; a wrench blank and a tap blank of each of the four sizes: 16, 18, 20 and 22, B. & S. Then you will require drills corresponding with these sizes, only smaller: .0046, .0037, .0028 and .0023 of an inch. You also require to have an American coin, known as a nickel. You will require a pin vice; two files, a coarse and a fine one; sand paper and emery paper; and at least one or two old instrument handles, if you can possibly get hold of them. There are several kinds of pin vices; some of them will allow the wire to turn, while others will hold the wire very tightly, but you cannot put a piece of wire as large as an engine bur into them, and as these taps are all this size, this pin vice is not much use, but you can get a pin vice that will serve both purposes properly.

As to the amount of work each student will be required to do. Each student will be required to make the following outfit and place it on a card and pass it in to the professor of the subject, and

the quality of this work will govern very materially your final grading in orthodontia :

You want some German silver wire drawn down from No. 9 to 16, 18, 20 and 22. (You do not anneal this wire). German silver tubing made from the 28-gauge German silver plate and from the 32 German silver plate, and also from very fine banding material. These tubes should be made to fit loosely, in most instances, over the different sizes of wire. On a short piece of German silver wire there will be threads cut on one of each size, and on this thread you will put two nuts of each size, that will make eight nuts. You will be required to make two for each size. You will be required to make four taps, one for each size.

The banding material.—Roll out banding material from German silver wire Nos. 11 and 13; when this wire is annealed it will be rolled down in the large rolls we have downstairs to Nos. 34, 36 and 38, according to the gauge-plate. After this banding material is rolled down, it must be rolled up into a small coil and annealed for at least an hour over a steady flame, at about a dull red heat; then being well annealed and very thin, it is very flexible. You will put one piece of each of these three sizes on the card that you pass in; you will put some waxed separating tape on the same card. It is put in wax and boiled until it becomes thoroughly saturated. Some brass wire will be put on the same card; on your flexible rubber tooth form you will place some appliance for the correction of an irregularity, that is wholly imaginary so far as the form is concerned, and will be described later. (I think, after you get to work, you will be able to do the whole of this work in a week easily. Mr. Temple will be able to supply you with everything you require, and then we will

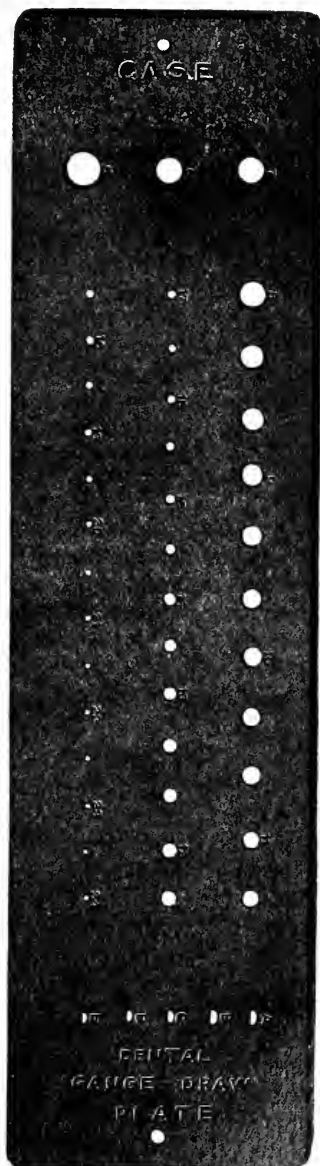


FIG. 2.

divide the class into sections and will go downstairs into the drawing-room and will draw down the wire and tubing and roll the banding.)

Here is a Case draw-plate, which I hold. (Fig. 2.) The numbers on this draw-plate are the sizes of wire according to the B. & S. gauge. These holes are about correct. Mr. Hartman and myself went over these holes and tried them and have drawn down wire and measured it in the gauge-plate. For instance, the wire that will go through the sixteen hole in the draw-plate will go through slot No. 16 in the screw-plate. The wire that will just go through No. 16 slot is the proper size to have the thread cut on it by the No. 16 hole in the screw-plate. There are two holes, one marked starting hole and the other marked finishing hole. (See Fig. 1.) The finishing hole is slightly smaller than the starting hole, so that you put the wire into the starting hole and cut the threads on it, and then take it out and put it into the finishing hole and cut the threads deeper. On the opposite side of the screw-plate you will see a plate-gauge, Nos. 24, 26, 28 and so on; this gauge will do to measure your German silver plate or banding material. When you roll down your banding material you will have your plate with you and you will see whether you are making the right size or not.

TECHNIC OF ORTHODONTIA.—NO. 2.

Lectures delivered by A. E. WEBSTER to Junior Class, in the Royal College of Dental Surgeons of Ontario. (Reported by Miss Sennet. Diagrams by Mr. Garvin.)

We shall discuss to-day the materials used in orthodontia, especially German silver. We use in orthodontia German silver, gold, platinum, iridio-platinum, steel, nickel and vulcanite. Probably the most universally used is German silver. The qualities of German silver are such that it is more widely applicable to all kinds of cases in the practice of the more modern methods of orthodontia than any other single material. German silver is a composition of copper, zinc and nickel; it is elastic, soft and malleable—only elastic when drawn down or hammered, and malleable and soft when well annealed. It is capable of taking a very high temper. It cannot be tempered, you know, as you would temper steel: heated to a high temperature, and plunged into water would not do. The only means of tempering we have at present are hammering and drawing down through the draw-plate. It has a very high fusing point, being in the neighborhood of two thousand degrees. The advantage in this is, of course, we may use high fusing solder, such as gold or silver. It is compatible with the tissues of the mouth, easily electro-plated and cheap. If an appliance does not suit, one will never refrain from changing it because of the expense of the material.

The means of making this material into the form we require for our work.—In speaking of the size of wire, of course we always use B. & S. gauge. We do not refer to the Martin screw-plate, thousandths of an inch, or any other except B. & S. gauge. Of course our draw-plates, screw-plates, nut die, drills and taps are all made according to this gauge. Here we have a piece of German silver wire, No. 9, tapered at one end. (Fig. 3.) This wire is placed into the draw-plate at No. 9 hole. You see the object of tapering the end is that it may pass through the draw-plate far enough to be grasped by the draw tongs in the drawing-machine. After it is grasped by the draw-tongs and plate put into position, turn the crank of the drawing-machine and continue to draw the wire through the plate from hole to hole without skipping any until No. 14 is reached, when you will cut about eight inches off the wire. Continue to draw the remainder until you get to No. 16 gauge, cut off about eight or ten inches, or perhaps more; continue to draw to No. 18—I may say, draw the remainder to No. 18. Now begin with this No. 11 wire, a portion of it, say one-third, and draw this down until you have reached No. 20;

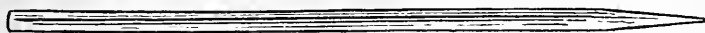


FIG. 3.

cut off some and continue to draw the remainder until you have reached No. 22 or 23. In drawing wire down, do not put the wire in the wrong side of the draw-plate; always keep the draw-plate well vaselined and do not stop the crank of the machine once you start to draw, or you will make little dints in the wire; continue the wire right through until it is out of the draw-plate.

Now, the reason we draw the wire down ourselves in preference to buying it in the sizes desired is this: in drawing the wire we get a high temper that we cannot get in buying the wire; as we ordinarily get it, it is annealed, having no spring temper; but after it is drawn down through the draw-plate it brings out the spring temper. For instance, I will show you some pieces of wire that are drawn down, that serve every purpose for springs or rigid appliances. That very same piece of wire that is now so springy may be annealed and made soft and pliable as if it were pure gold or silver. It is sufficiently hard when tempered to have a thread cut upon it that will be very strong, indeed, it is sufficiently hard to bear a great deal of pressure before the thread will be stripped.

The tubing is made from German silver plate 28 and 30 gauge. We cut German silver plate 28 gauge in strips about a quarter to five-sixteenths of an inch wide, being sure to have the strip of plate the same width at every point. You quite understand

that it would not do to have this strip a half an inch wide at one place and a quarter of an inch at another. Then trim the end with your shears, making it pointed at one end, trimming it at both sides. (Fig. 4.) You will remember that it must be well annealed. Having the piece of plate annealed in this way you may take your pliers like that—those half round pliers—and start it to turn at that point; then take the square-nosed pliers and slightly bend the plate into a circular form, or let it into the half-inch round slot that is cut in a piece of scantling in the drawing-room, and upon it place a piece of steel wire and strike it, making the strip concave. The object of bending it this way is to get it so it will not reverse when you put it through the



FIG. 4.

draw-plate. After bending in this way, we will take the pliers now and bend up the end, twisting it up so that it comes into a fine thread on the end (Fig. 5), having then a thick portion that may be grasped by the draw-tongs; in this way it is not so likely to break at the end, which is difficult to overcome any other way. Tubes should be annealed frequently while being drawn. The draw-plate should be well vaselined; the draw-tongs should grasp the piece of tubing at the end firmly, and tubing once started into the draw-plate should go through without stopping; draw straight through, not allowing it to move from one side to the other. If you stop you will have the same little wrinkles on the tube you would have on the wire. Then tubing should be drawn down so



FIG. 5.

as it will fit over Nos. 14 and 16 wire loosely for this reason: when the thread is cut upon a piece of German silver wire it more or less increases its diameter, therefore it must pass through the tubing very loosely in order that it may pass through it after the thread is cut upon it. Then we will take this thinner piece of German silver—I mean No. 32—and draw it down to fit-wires Nos. 18 and 20. For tubing to fit Nos. 22 or 23 draw banding material about 34 gauge—this will answer the purpose.

Banding material will be made from German silver wire Nos. 11 and 13—No. 11 will make broad banding, while No. 13 will make narrow. The German silver for banding material should have a high percentage of nickel, even up to 25 per cent. What we have is about 18 per cent. The wire must be well

annealed before putting into the rolls—annealing frequently and turning over the wire from one side to another as it is put through the machine. From time to time test the wire by feeling for rough edges and see whether you are annealing it frequently enough, or to see if you are turning the set screw of the rolls too rapidly for the wire. Here is some very good banding material; you will see it comes out slightly tempered as you see here; then it must be well annealed two or three hours at a dull red heat after it is rolled out. Then you will have banding material that is flexible, and may be formed into any shape and conform to any inequalities on the tooth. The thickness of banding should be 34, 36 and 38. Now it will be impossible for you to get these exact. You will have your gauge-plate with you, of course, and you will be able to measure and find out what sizes you are making.

The tap is the next before us. You desire to make a tap for cutting the threads in the nuts. You select the size tap blank you desire and measure the steel on the side of the screw-plate. These blanks are annealed steel. What you desire to do is to cut the thread upon them. First fasten the blank well into the pin-vice, and as straight as you can, with a file, taper the blank a little bit

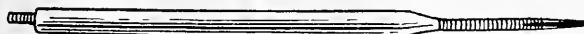


FIG. 6.

(in this way) so that it will start into the plate easily at the desired hole on the screw-plate, holding the screw-plate in the left hand and the tap in the pin-vice in the right, turn the tap slightly holding the instrument in your fingers and not your hands, so that you can feel how much pressure it will take; turn to the right and back to the left not more than a quarter of a round at once, cutting back and forth. You will feel it cut through instantly. You can cut these threads about one-half inch in length on the steel; use oil. Now, in cutting this thread we will run this up just to show you how. There is something peculiar about cutting these different threads. Steel will cut much more easily than German silver; taking the same size piece of steel and the same size piece of German silver, the German silver will twist off before you can turn it through the screw-plate and the steel will cut.

We have a thread now cut on this piece of wire and with a file we make it three cornered, allowing the flattened surface made by the file not to reach more than three-quarters the length of the threaded portion, so that it will leave a small portion of well-cut thread at the end. (Fig. 6.) Now, after you have cut the thread on the tap, put the tap into your pin-vice in the opposite way and cut a thread on that small turned portion at the other end; this portion is intended to receive the nut while it is being trimmed. If you

should happen to break a piece of this steel in the screw-plate take a pair of pliers and try to turn it out. If you cannot get it out that way cut a screw-head in it with a small file and then use a screw-driver or small chisel. If you cannot get it out that way get a hacksaw and saw it out. Now we have a thread cut on this.

To temper it comes next. Hold the tap in the pin-vice, passing it through the flame with a to-and-fro movement (get the greatest amount of heat on the shank of the instrument) until it becomes

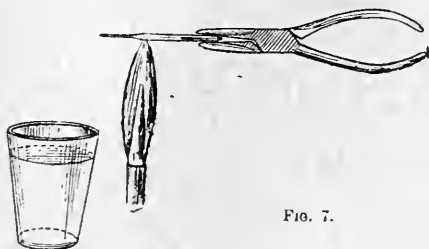


FIG. 7.

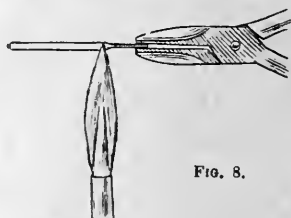


FIG. 8.

a cherry red, hold the water close to the flame and immediately plunge. (Fig. 7.) This temper will be quite hard. You see how readily it breaks. Now we do not wish to have the whole of the tap as hard as that. We desire only that portion with the thread on it to be hard, while the shank must not be hard or it will break. In order to get a soft shank we take hold of the threaded portion of the tap with a pair of heavy-nosed pliers, first polishing the black off. Take hold of the instrument this way (Fig. 8), holding it in



FIG. 9.

the flame until you see a blue color running up towards the point, and plunge in water as soon as you see that straw color come up to the end of the pliers. Now we have the shank soft and the threaded portion quite hard. The tap is now ready for use.

Question of drills. (Fig. 9.) The drills you buy are twist drills, slightly smaller than the tap. The large size is .004 of an inch smaller than the tap. The object is to cut the hole through the nickel small enough so that it will allow the thread to be cut upon it for the nut.

Proceedings of Dental Societies

TORONTO DENTAL SOCIETY.

The first annual clinic of the Toronto Dental Society was held in the Dental College building on Monday and Tuesday, February 25th and 26th.

On Monday, at 2 p.m., Dr. W. V. B. Ames, of Chicago, read a paper on "Some Phases of the Cement Question," "The Use of a Flux to Control the Setting of Oxyphosphates" and "The Coloring of Cement for Filling Teeth." The discussion was opened by Drs. Harold Clark and G. S. Martin, followed by Drs. Trotter and Pearson.

At 4 p.m. Dr. W. A. Price read a paper entitled "The Use of the Roentgen Ray in Dentistry Illustrated and Demonstrated." Discussion by Drs. Peters, Frank D. Price and T. W. Brophy.

A telegram from Dr. C. N. Johnson, of Chicago, was read, expressing his wishes for a successful meeting.

The meeting was adjourned at 5.30 to meet at the Society's fourth annual banquet, which took place at 7.30 the same evening at the Temple Café, with 106 at the board. After the supper, speeches followed by Drs. J. B. Willmott, McLaughlin, Seccombe, Hudson, Beattie Nesbitt, McDonagh, J. F. Adams, Reade and Primrose, of Toronto, and by Drs. Brophy and Ames, of Chicago; W. A. Price, of Cleveland; Dr. Thornton, of Chatham; Dr. Cross, of Oshawa; Dr. Moyer, of Galt; Dr. Allen, of Paisley; Dr. Marshall, of Belleville. Vocal selections were rendered by Mr. Sparks, organist of St. Paul's Episcopal Church, and Dr. Sparrow. Senior Fabiani delighted the guests with the talented rendering of music on the harp.

On Tuesday 26th, at 10 a.m., Dr. Brophy, of Chicago, read a paper on "The Surgical Treatment of Cleft Palate," in which he described and illustrated the operation for the correction of the deformity in infant children, known as the Brophy operation, and also the operation for those older. The discussion was opened by Dr. Primrose, followed by Drs. McLaughlin, Peters and Cameron.

At the close of Dr. Brophy's paper Dr. J. B. Willmott moved, seconded by Dr. C. E. Pearson, a vote of appreciation to the gentlemen from the United States who took part in the programme and who have in the past, by their research, been of such service to the medical as well as the dental profession.

A motion was carried instructing the Secretary to write Dr. H. T. Wood that the Society regretted his inability to be present.

At 1 o'clock the meeting was moved to the operating theatre

of the Sick Children's Hospital, where Dr. Brophy, assisted by Drs. Powell and Peters, performed an operation for the closure of a cleft palate for a little three-year-old girl.

At 3 o'clock Dr. Bruce, of Toronto, read a paper on "The Articulation and Occlusion of Teeth." Discussion opened by Dr. J. B. Willmott.

At 4 o'clock Dr. W. V. B. Ames gave a clinic on the refitting of ill-fitting dentures with oxyphosphate of copper cement.

At 4.30 o'clock Dr. S. Moyer, of Galt, read a paper on the "Preparation of Cavities." Discussion opened by Drs. Eaton and Hoare.

The following clinics were given in the Infirmary on Tuesday afternoon: "Treatment of Abscess and Bleaching Teeth with Sodium Peroxide," Dr. Wunder. "Gold Filling," Dr. T. Gallougher. "Open-faced Crown and Bell-shaped Crown on Teeth without Trimming," Dr. A. J. McDonagh. "Hypnotic Suggestion," Dr. W. E. Willmott. "Painless Immediate Separation," Dr. S. McL. Milne. "Platinum and Gold Filling, using Harper's Annealer," Dr. T. McGill. "Restoring Crowns of Badly Decayed Roots," Dr. W. J. Woods. "Hygienic Saddle-Bridge," Dr. J. F. Adams. "Pulp Digestion with Papain," Dr. Geo. Gow. "Combination Tin and Gold Filling," Dr. G. Howard. "Porcelain Contour with Wire Retention in Incisor," Dr. J. F. Ross. "Condit System of Retaining Dentures," Dr. W. A. McLaren. Treating Case of Pyorrhea," Dr. C. E. Pearson.

ROYAL DENTAL SOCIETY.

The third monthly meeting of the Royal Dental Society was held in the college building on Monday evening, January 28th, the President in the chair. The programme was instructive and interesting, the first number being an exhibition of the X-ray apparatus in working order, with numerous interesting and humorous lantern slides, by Dr. W. E. Willmott.

The Mandolin and Guitar Club of the college gave a medley of choruses, which were exceedingly well rendered and called forth great applause.

Mr. E. W. Paul read a very instructive paper setting forth the manner of construction and advantages of "The Inter-dental Band Crown." (See page 88.)

Mr. H. Hartman, in opening the discussion, said: This paper has been very interesting to me, but there are several arguments brought forward with which I cannot agree. The writer claims that, as it is not necessary to remove the enamel in this class of crown, it

does away with considerable pain, which he claims is often necessary in preparing a root for the new Richmond crown. Removing the enamel should not cause any pain worth mentioning. By placing a short piece of rubber tubing, which fits tightly around the tooth well up on the gum at the neck of the tooth and leaving on over night, so that the gum may be pressed back, the enamel may be removed quite painlessly without even causing the gums to bleed. That this crown can be successfully used on the ten anterior teeth seems to me doubtful. It would be very difficult to use a trephine, which must necessarily be perfectly round, on a first or second bicuspid root, particularly the first bicuspid, as these teeth have, in four cases out of five, two root canals, and at the gum line the canal is quite wide bucco-lingually. This difficulty might be overcome by using a fissure burr, but I doubt if it could be used successfully. Again, it is claimed that a band on the outside of a root causes irritation, and that it encourages the accumulation of débris, bacteria, etc. Now a band on the outside of a root strengthens it very considerably, much more, in my opinion, than an inter-dental band possibly can, and if properly extended below the gum line forms a perfectly smooth surface at the free margin of the gum. It also prevents the dissolving of the cement, and restores, more or less perfectly, the natural contour of the enamel. The inter-dental band would not prevent the crown from rotating, and it would be quite difficult to make a perfect joint. Where roots are perfectly sound this crown might be used to advantage on the six upper anterior teeth, but in any other position in the mouth its use would be contra-indicated.

Mr. Roy Heath then gave a comic song, and responded to a hearty encore.

Mr. R. T. McDonald read a paper on "Odontalgia." (See page 90.)

Mr. Mooney opened the discussion. Dr. Webster, Dr. Pearson and Dr. Willmott also spoke briefly on the subject of reflex pain.

The Mandolin and Guitar Club gave another selection, which brought the most successful meeting of the society of the year to a close.

PROF. W. C. BARRETT COMING.

Dr. W. C. Barrett, of Buffalo, will give a lecture in the Dental College, under the auspices of the Royal Dental Society, on "Mechanics," Saturday, March 16th, at 8 p.m. Members of the dental profession are invited to be present.

NOVA SCOTIA AND NEW BRUNSWICK SOCIETIES.

The second biennial meeting was held at St. John, N.B., August 29th, 30th and 31st, 1900.

Dr. MURRAY, Moncton, held the attention of the dentists for fully fifteen minutes with his paper on "Crown and Bridge-Work." (See page 80.)

Dr. HOOD, Beverly, Mass., started the discussion. He complimented his old college friend on his paper, which he thoroughly enjoyed. It was almost perfect, and if those present heed many of the valuable suggestions contained in it even better work might be done by all.

Dr. LANGILLE, Truro, said bridge-work with him was rather a new departure. He took a post-graduate course in it in New York two years ago. He thought bridge-work in the past had been sadly abused in placing the bridges on unsound abutments. In a great many cases attempts at bridge-work have been complete failures. He appreciated Dr. Murray's able paper, and could say that his slight experience in bridge-work had been very satisfactory.

Dr. ROBERTSON, St. John, said he put a bridge in a mouth in 1895—gold crown on the second molar, first molar, and first and second bicuspid were dummies, and the bar extending in the canine. The patient was a young lady who chewed on the bridge side almost exclusively. At this time the bridge is in as good condition as the day it was inserted, and the patient praises its use.

Dr. MURRAY, Moncton, said while his personal experience with the gold bar was only limited, he saw two or three unsatisfactory cases: a loosening and leakage being very apparent, compelling the removal of the bar.

Dr. BELYEA, St. John, used Melotte's Moldene, which he claimed worked very nicely in crown and bridge-work. It was of a different color from the investment and easier to work with. He took exception to Dr. Murray's reference to the bridge and bar, for he has seen some very fine work done with these.

Dr. MCINTYRE, Summerside, P.E.I., endorsed all Dr. Murray had said in his paper, especially the reference to bar connection, which the best crown and bridge-workers condemn. Dr. McIntyre thought it was best to crown all the teeth. He had seen some extensive bridges put on, but all were failures from the fact of the abutments being non-perpendicular.

Dr. THOMPSON, Lynn, Mass., told of a Boston chemist who had brought out a liquid he called "Sorosin," which facilitated soldering a great deal, as it did away with sputtering and the throwing about of the solder.

Dr. WHITNEY, St. Stephen, said while in Chicago at the World's Fair he took a course in bridge-work, a French dentist

doing the demonstrating. One of the pointers he learned there was to coat with common shellac the surface of a porcelain crown before investment to prevent cracking. Dr. Whitney said he had tried it often and never had a crown to crack.

Dr. MOORE'S experience in bridge-work had been very limited, having only one case in eight years, but he thought this single case was successfully treated. He always advises patients not to have this class of work done if the tooth is a tooth at all. Crown and bridge-work is most certainly one of the best ways advisable to deal with teeth, doing away with the inconvenience of a plate, but it behooves all dentists to consider the teeth they are working upon. He took exception to Dr. Murray's remark as to the cleanliness of bridge-work.

Dr. SANGSTER, Sackville, asked questions as to soldering and burnishing the backing. In the matter of using flux he said he had no trouble with bubbling. He used a solution of borax. He cut the solder up and dropped it in a little dish like a watch face. Then he picked it out and let it dry when there was enough borax on it to make a flux, and no bubbling.

Dr. MANNING, St. John, had seen some bridges and was of the opinion of Dr. Murray regarding them. He saw a bar last year and it was in a bad state.

Dr. MURRAY then closed the discussion with a few well-chosen remarks.

Dr. E. J. THOMPSON, Lynn, Mass., read a highly interesting paper on "Cleft Palate," illustrating his remarks with various models and citing cases.

Dr. G. K. THOMSON, Halifax, who was down on the programme to read a paper on "Pulp Treatment," changed his subject to that of a general one, which he titled "The Remedy"—suggestions as to the elevation of the dental profession and the maintenance of the dignity of it. (See page 82.)

The discussion which followed Dr. Thomson's paper was of particular interest, inasmuch as it was something out of the ordinary, at least not pertaining so much to the treatment of diseased and aching teeth, upon which most of the previous papers had dilated.

Dr. F. A. GODSOE, St. John, was of the opinion that Dr. Thomson's paper gave the dentists there assembled considerable food for thought, and with regard to that part of the paper referring to specialists he thought dentists really had no right to be called specialists in medicine. He believed in trying as much as possible to elevate the profession and to gain the respect of other professions in so doing. Personally, he had always tried to do what was consistent with his calling, and to charge what he thought his services were worth. In St. John, dental charges are moderate. Dr. Godsoe put himself down as in favor of Maritime registration, also Dominion registration. To bring about these, however, consider-

able legislation will necessarily have to be gone through with, but as there has to be a beginning to everything these may in time be secured. If interprovincial registration is brought about, Dominion registration will follow in due time.

Dr. MURRAY, Moncton, coincided with Dr. Godsoe. He believed in trying to make young dentists coming into the profession take an interest in the affairs of the Dental Society. More geniality and good fellowship was needed. Dr. Murray said it was always his aim to elevate the profession, and bring it as much as possible to the level of other professions in every way. If dentists will only attend the meetings of their own profession they will become more and more educated in many ways.

Dr. ROBERTSON, St. John, touched upon that part of Dr. Thomson's paper which referred to the advertising dentist. He asserted that the advertising quack was not in favor. He himself had a professional card in the *Globe* newspaper, in St. John, but that was all. Dentists should be above advertising, for a practice built up in that way is sure to be lost again; somehow or other it doesn't seem to continue. If a dentist does good work and is conscientious, his reputation will bring him sufficient business.

Dr. MCARTHUR, Parrsboro', agreed with the writer of the paper in regard to specialists, but was at a loss to know why dentists could not command more respect from the medical fraternity.

Dr. MOORE, St. Stephen, was of the opinion that dentists really had no right whatever to practise as specialists. However, if medical men and dentists were only a little more courteous all round, there would undoubtedly be more equality and levelling up. As to registration, if by talking it up at provincial and interprovincial meetings an interprovincial society is formed, a Dominion society could soon be organized. This would certainly have a dignifying effect on the profession and elevate its standard in no meagre degree.

Dr. THOMSON closed the discussion of his paper with some remarks on chloroform application and a few suggestions as to the solution of the "specialist" question.

After Dr. THOMSON had made the closing remarks in the discussion on his paper he moved the following resolution:

"Whereas the members of the dental profession in the Maritime provinces here assembled consider it desirable to meet regularly for the purpose of holding clinics, reading and discussing papers on scientific subjects relating to dentistry, it is therefore resolved that the said members of the dental profession here assembled do hereby organize themselves into a body to be known as the Maritime Dental Association which shall be a separate and distinct organization from those of the New Brunswick and Nova Scotia and Prince Edward Island Associations, and solely for the purpose

of the social and intellectual development of the profession of dentistry in the Dominion of Canada."

Dr. ROBERTSON, St. John, seconded the resolution.

Dr. THOMSON said the object of the Maritime organization was purely for the social and intellectual benefit of those belonging to it.

Dr. GODSOE asked how the expenses of the annual meetings of the proposed Maritime Association might be met. He also wished to apologize for the apparent slight on Prince Edward Island dentists by not having the Island mentioned in the resolution.

Dr. THOMPSON said those who attended should pay all the expense each year, and those who are absent are not members for that year.

Dr. ROBERTSON believed a one-dollar fee from each member attending would be a fair taxation, and if there were any shortage the separate societies in the association should make it up.

Dr. MCINTYRE, Summerside, P.E.I., said there was no need of an apology from Dr. Godsoe, as the Island dentists present did not consider that they had been slighted, in fact quite the contrary. He personally esteemed it a compliment to be asked to write papers for the present joint gathering, also to give a clinic. The Island dentists feel, he said, that their laws are not up to those of New Brunswick and Nova Scotia. Some day, not far distant he hoped, the dentists would be holding their Maritime convention in Charlottetown.

Dr. GODSOE thought a Maritime Association should be wholly dependent upon itself, and not look for support from the provincial associations, as such would be detrimental to the smaller organizations.

Upon this point Dr. THOMSON took issue with Dr. Godsoe. He acknowledged that the provincial organizations would really not be compelled to assist the proposed organization, yet he did not see any good reason for them not doing so, if there was a shortage.

Dr. LANGILLE thought the expense clause was being somewhat exaggerated. The rent of a place of meeting would be considerable, perhaps \$10.00 or \$15.00.

Dr. ROBERTSON suggested that exhibitors might be asked to contribute toward the expenses of a meeting; but this Dr. Godsoe put down as unfair and presumptuous.

Dr. HARDING, Yarmouth, thought it would not be quite right to contribute provincial funds for Maritime purposes. It was better to tax members yearly, and the Maritime Association foot its own bills.

Dr. MANNING asked, apart from the legality of taking funds, would it not tend to bring about larger attendances if the member-

ship fee of the Maritime Association were placed at \$1.00, and any shortages drawn from the provincial societies? He was sure it would be agreeable and double the number would join. The more you frighten with talk of expense the heavier the expense.

Dr. THOMPSON thought the provincial fund idea should at least be given a trial, and as there were two years yet to spare, the question was not of particular moment.

Then a vote was taken on the resolution, one dissenting voice being heard.

Dr. THOMPSON then moved as a Committee of By-laws for the Maritime Association, Dr. Godsoe, St. John; Dr. McIntyre, Prince Edward Island, and Dr. Langille, Truro, N.S. This committee was to report at the next joint meeting.

Dr. GODSOE wished to have his name withdrawn from the committee as he really could not give the time the duties of such an appointee necessitated.

Dr. MOORE, St. Stephen, was then appointed in his place.

NEXT PLACE OF MEETING.

With reference to the next place of meeting Dr. MOORE said it was Nova Scotia's turn to have the joint gathering, but Dr. Robertson, St. John, suggested Charlottetown or Summerside, P.E.I.

Dr. LANGILLE accorded with this suggestion.

Dr. MCINTYRE, Summerside, P.E.I., said the Island dentists would be only too delighted to have the next joint meeting held in their province. Then he told how easily accessible either of the Island cities above mentioned was to both New Brunswick and Nova Scotia brethren.

It was then decided to hold the next joint meeting in Charlottetown, in 1902.

Dr. Bagnall, Prince Edward Island; Dr. Langille, Nova Scotia, and Dr. Wetmore, St. John, were appointed as the Executive Committee for next meeting.

Dr. MOORE moved a vote of thanks to those who had read papers, to those who had conducted clinics, and to the dentists who allowed themselves to be used as patients for demonstration purposes.

The exhibitors were also included in the vote, which Dr. Godsoe seconded, and was carried unanimously.

Dr. MURRAY, Moncton, added his personal thanks to the vote and spoke felicitously of the executive, who had attended to the details of the meeting untiringly.

Drs. Godsoe and McAvining, St. John, responded modestly to these thankful remarks and vote.

Dr. Hood, Beverly, Mass., and Dr. Thompson, Lynn, were heartily thanked for their papers and demonstrations.

Dr. Hood replied in a happy vein, but Dr. Thompson was modestly absent.

Dr. GODSOE said he would like all to sanction the expenses of the meeting. This was done.

Dr. LANGILLE thanked the St. John dentists in advance for the good time in store on the morrow. Dr. McArthur seconded it. Carried.

The janitor's fee was granted.

Adjournment.

THE TRIP ON THE RIVER.

Friday morning turned out to be one of the most delightful of days. The sun shone brightly, and a fresh northerly breeze cleared the air of all the dampness and heaviness of the day before. Before the Star Line steamer *Victoria* had tooted the third time one of the merriest parties of dentists, their wives and other lady friends were aboard. Not all the visiting doctors were present, but mostly all, and with the best of music by the Italian orchestra the sail up to the Buelah Camp-ground at Brown's Flat was all the more enjoyable.

Passing out through the Morrows with their precipitous sides into the expanse of Grand Bay, and then speeding along up the Long Reach gave the strangers a fairly good idea of the beauties of the famous St. John. The country was looking its very best, and the St. John doctors felt proud of their province's renowned stream, especially when the visitors were loud in its praises.

After a sail of an hour and a half the Buelah Camp-grounds were reached. Proprietor Belyea, of "Rockdale" hotel, had flags flying in honor of the dentists' coming, and the general aspect from the hotel elevation was one of particular picturesqueness.

Photographer Legrin grouped the party and took a couple of pictures, despite the efforts of Drs. Whitney, Magee, McAvenney and Murray, who tried their best to "break up" the sitters with their "funnyisms."

Then everybody strolled through the pretty camp-grounds of the Reformed Baptists, and were entertained for a short time aboard J. Fraser Gregory's trim little houseboat *Solid Comfort*. Everybody was having a good time, and cameras clicked incessantly on groups, ludicrous situations and pretty landscapes.

Mine host Belyea outdid himself in his preparation of the good things to eat. When all had been seated at the T-shaped table, Rev. Mr. Trafton, who was a guest at the hotel, was asked to say grace. Then the discussion of the wholesome St. John River viands was commenced with a zest, which testified to the enlivening influences of a sail on the "Rhine of America," with a head wind.

Whilst dinner was being served the Italian orchestra discoursed the airs of the day, both classical and popular. After all had done

justice to the sumptuous repast, the gentlemen, of course, had to have their smoke, and sitting out on the piazzas, on the lawn, and swinging in hammocks, whiled away an hour or more until the down river steamer, *David Weston*, hove in sight, and the sail back to the city was another source of great enjoyment. All were loud in their praises of the day's outing, and to those who had never before sailed on the noble St. John the trip was indeed a revelation.

Thus the second biennial joint meeting of the Nova Scotia and New Brunswick Dental Societies came to a most successful termination.

ALUMNI ASSOCIATION OF BUFFALO DENTAL COLLEGE.

The annual clinic of the Alumni Association of the Buffalo Dental College was held on January 24th and 25th, and was from both the instructive and social point of view an unqualified success. The programme was complete and varied and the attendance fairly large, including representatives from all parts of the continent.

The meeting was opened on Thursday afternoon by Dr. Kirk, of Philadelphia, who addressed his remarks especially to the young dentists present, and spoke of the substantial pleasure and benefit to be derived by one in following a calling not with the object mainly of the financial, but of being a *producer* of knowledge in his line of profession, contrasting such a man's happiness with the fleeting and unsatisfying pleasure of him who is simply striving to attain some worldly object, of which he soon tires. Dr. Kirk urged the dentists to be investigators, and said the fact that so few were such was due to their disinclination rather than incapability.

Dr. Jackson, of New York, then explained by a system of charts, his original methods of dealing with orthodontia. All his appliances have the great advantage of being easily removed. The speaker clearly showed how, by means of a base-wire supporting a spring wire which is bent into loops at certain points, he could get a force exactly where he desired it to be; he explained that these wires did not go *around* the teeth as bands, but bent down over them much after the fashion of an Ivory molar clamp.

Dr. Custer next addressed the meeting on electricity and its application to dentistry. He spoke of the many uses to which it might be put, and advised that its strength should be about 150 volts; if, however, it were brought in from the street-lighting wires with a strength of about 500 volts the dentist should throw in sufficient resistance in the form of lights, etc., to reduce it to 150 volts, which is sufficient for all his purposes and at the same time safe. The doctor supplemented his talk by practical demonstration, which he gave in the clinic room the following day.

Friday was the busy day of the association, the chief clinic of the day being an operation for cleft palate on a boy eight years of age. This was skilfully performed by Dr. Brophy, of Chicago, and was extremely interesting, as evidenced by the large number of both dental and medical men present. He explained the operation step by step, and made everything very clear. In his choice of time for an operation of this character the doctor prefers early childhood in order to secure perfect union of the parts. In the clinic room Dr. Jackson also gave a practical demonstration of the construction of his orthodontia appliances which he had described the preceding day, and showed how quickly and advantageously he could work with the ordinary soldering iron and bending pliers, emphasizing the importance of good models as the basis of all good work. Later in the day, Dr. Good, of Chicago, demonstrated his treatment of "Pyorrhea Alveolaris." He emphasized the necessity of complete removal of all deposits by suitable instruments for this purpose, this operation to be followed by the use of lactic acid or pure sulphuric acid, to be syringed into the pockets. He recommended that the operation be repeated at stated intervals until the patient is cured. Dr. Good thought this disease could easily be cured in the earlier stages, but if the teeth have become much loosened in their sockets very little could then be done for the trouble.

Dr. McManus, of Hartford, Ct., presented Dr. Barrett, on behalf of the College, a framed portrait of Horace Wells, to whom is given the credit of introducing nitrous oxide gas as an anesthetic, thus conferring on humanity an invaluable benefaction. At the same time Dr. McManus gave an interesting history of anesthesia, and reminded his hearers of how much had been given free to the world by the modest dentist of Hartford, and how little thanks had been given to him in return for his gift.

Not the least important part of this Convention was the social event, which consisted of a banquet tendered to the visitors on Friday evening at the Genesee Hotel. During the course of this enjoyable part of the programme, speeches were delivered by Drs. Barrett, Brophy, Jackson, Field (of Detroit), Custer and others; also by the student representatives from the various colleges.

Altogether the value of this meeting of the Buffalo Alumni Association was very much appreciated, and Dr. Murray, the President of the Association, as well as all the other members of the Committee deserve much credit for its success. It is to be hoped that next year the graduates will be afforded a similar opportunity of gathering together, learning from the great teachers and interchanging ideas upon matters connected with their profession.

BOARD OF DIRECTORS OF THE MANITOBA DENTAL ASSOCIATION.

The annual meeting was held the second Tuesday in January for the examination of students and the transaction of other business. Four students succeeded in passing the final examination, and were awarded certificates of license. The following resolution *re* the death of Dr. Beers was unanimously passed :

"That this Board learns with deep regret of the death of Dr. W. G. Beers, of Montreal, and takes this opportunity of expressing its sincere sympathy with the bereaved relatives, and its deep regret that one so prominent and useful in his profession should have been removed from us, and expresses its feeling that his demise is a serious loss to the profession in Canada."

G. T. BUSH, *Sec.*

Selections.

DEATH FROM ADMINISTRATION OF GAS AND ETHER.

The *Times* of December 29th relates an instance in which a young man at Newport, England, a collier, died in the chair on the conclusion of an operation for the extraction of a number of teeth. From later accounts published in the local press we gather that gas and ether were administered, eleven teeth being successfully removed. Subsequent to the operation, however, the patient—a young man of 21 years of age—"sprang up out of the chair and gave a gasp." Artificial respiration was resorted to, but without success. On a *post-mortem* examination being made it was found that the patient had inhaled one of the sponges used during the operation, and had consequently died of suffocation. The papers state that the medical man who was called in to the case, and who subsequently made the examination, was of opinion that the deceased could not have coughed up the sponge, or given any indication of an obstruction, owing to the condition of the lungs, due to old pleurisy. The jury in this instance also returned a verdict of death due to misadventure, and expressed the opinion that everything possible was done for the deceased.

Dominion Dental Journal

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NEED OF DENTAL ORGANIZATION IN CANADA.

For several years previous to its meeting the Third World's International Dental Congress was known to the dental profession. Every dentist in the world knew when and where the meeting was to be held. For months before the meeting took place every dentist knew who was going to take part. Every national dental organization knew officially what privileges were granted it by the Organization Committee in Paris. Every dentist knew the requirements for membership. Yet in the face of all this information the Paris Committee of Organization did not officially know of Canada, nor did the dentists of Canada make any effort to become known to the committee.

Out of the 1,500 dentists in Canada there was not an official representative at the Paris Congress. In fact, it was wholly impossible for a Canadian dentist to become a humble member of the congress, not to mention being an official delegate. Canadians who attended and became members of the congress had to be vouched for by a dentist of a foreign country simply because the Paris committee did not know of Canada. It is surely a strange state of affairs when a Canadian and a British subject is compelled to go to a foreign country to obtain credentials to permit him to attend an international dental congress.

In Canada there is not a dentist who has so little national spirit in him as would say that his country should not have been

represented at the Exposition in mining, farming and manufacturing, and yet what effort did these very men make to have their own profession represented at the largest and most renowned dental congress ever held? Think of the prominence Canada and Canadians would have gotten if there had been a representative to speak on inaugural day to the 1,500 dentists from all parts of the world, not to mention the honor of having the name of our country stamped upon the thousands of official copies of the proceedings that will be sent all over the world.

The dentists of Great Britain were more anxious that we should be represented at the congress than we were ourselves, because as soon as the British Dental Association recognized that Canada did not appear in the official list of countries from which the Paris committee would accept members, it sent word to Canada to appoint representatives who might attend the congress as colonials, and that it would vouch for their credentials. Inasmuch as there was no official body in Canada to appoint such representatives nothing was done. The various provincial boards had no power to appoint representatives for Canada. It is safe to say that every dentist in Canada wished to see the Canadian profession represented at the congress, but it could not be done.

This whole matter shows a marked lack of organization. The officials in Paris could not communicate with any official national organization in Canada. Such a thing does not exist. The British Dental Association was unable to find any association, board or individual that had power to appoint a Canadian representative to the congress. No person outside of the country who does not understand our laws knows how to reach the Canadian profession. We are much like an army without a leader. We have the leaders for the eight provinces but no general for the whole Dominion.

There are two methods of union and organization of the dental profession of Canada that will bring about a national professional feeling, an imperialistic and international recognition. One is the formation of a Dominion Dental Council which will be appointed from the various provinces, and will hold an annual examination for the granting of licenses to practise in any province in the Dominion. The medical profession at the present time has a Bill before the House of Commons, having for its object the formation of a Dominion Medical Council much on the same plan as that suggested for the dental profession by Dr. McInnis and Dr. Willmott in the February number of this Journal. The other plan would be the formation of a Dominion Dental Association. A beginning was made in this direction last year when the dentists of Nova Scotia, New Brunswick and Prince Edward Island formed the Maritime Dental Association, and the dentists of Manitoba, North-West Territories and part of Ontario formed the Western Dental Association. It matters little which

of these plans of organization comes first, the one is certain to bring the other. What we do want, and what we need badly is the nationalization of the dental profession of Canada so that we can speak through such an organization to the dental profession of other countries and they to us. Dentistry is no longer a provincial matter; it is national, and, in fact, international in character. The dentists of Canada should be so organized under one central head that they could make their existence felt in all national and international questions pertaining to dentistry. This condition is sure to come, and it only remains for the profession to become interested, and in this way hasten its advent.

DR. G. LENOX CURTIS' SYMPATHIES.

It was with deep regret that I read of the death of our friend, Dr. W. George Beers. The dental profession has lost one of its greatest Motors and the profession of Canada its greatest benefactor. Probably no one man ever did or could do as much as Dr. Beers did to advance the science of dentistry and to maintain its dignity. He gave the best years of his life to his work, and he accomplished much, overcoming obstacles that seemed unsurmountable, and placing the profession on such a footing that it is an honor to belong to it. Genial and hospitable in disposition, he was loved and admired by those whose good fortune it was to be his friends. Our sympathies are extended to his bereaved family, his friends and the dental profession. G. LENOX CURTIS.

Editorial Notes.

THE Dominion Government, during the past year, made 17,785 tuberculin tests in cattle; 358 reacted to the test.

AT the annual banquet of the Toronto Dental Society, Dr. M. F. Cross, of Oshawa, proved himself to be a very bright and humorous after-dinner speaker.

Dr. FEAR, of Aylmer, Ont., who is examiner in prosthetic dentistry in the Royal College of Dental Surgeons of Ontario, spent a few days in Toronto in February.

AT the residence of the bride's parents, 96 Gloucester Street, Toronto, February 26th, 1901, Miss Florence Love was married to Dr. Otto Plaxton, of Parry Sound. Dr. D. H. Beaton, of Toronto, was groomsman.

BY injecting cocaine solutions into the muscles in the lumbar region, the lower extremities become so insensible to pain that major operations may be performed without the use of a general anesthetic.

A VERY interesting feature of the recent clinic of the Toronto Dental Society was the operation performed at the Children's Hospital by Dr. Truman W. Brophy, of Chicago. The Society is very much indebted to Dr. Powell for providing a patient.

Correspondence

SCHOOL DENTISTRY IN CANADA.

To the Editor of DOMINION DENTAL JOURNAL:

From recent articles appearing in this Journal, it is evident that a systematic effort is being made by the school authorities of Great Britain and Russia to insist upon the regular inspection and proper care of children's teeth. Nearly all the district and parish schools in London have regular salaried dentists, who examine the teeth of all children at stated intervals. The schools provide in most cases a room fully equipped with dental appliances. On the training ships great attention is paid to the proper care of teeth. The dental surgeon attends once a week from 10.30 a.m. to 4.30 p.m. A good dental equipment is supplied. The great public schools of England, at which sons of the upper and middle-classes are educated, almost without exception make careful provision for the inspection of the teeth, and insist on all defects being put right. Marlborough College is one of the best known of these schools and may be taken as an example. In your November number the requirements at this school are given as follows: "All new boys must have their teeth examined by the dental surgeon at the beginning of the term. New boys, who are in the habit of being seen by a good dentist are advised to visit him, if necessary, at the next vacation; where several teeth are very carious or are needing extraction, a chart is made out, and a report sent to the parents with a letter from the medical officer, sent at the wish of the head master, and an estimate of the fees is quoted. It is quite optional on the part of the parents as to whether the work be done at the college or not. A report is, if necessary, sent with the chart in the case of all new boys who do not see a dentist regularly, and no work is undertaken for new boys without the written consent of parents or guardians. Other boys desirous of professional attendance are considered as private patients, but the fees must not exceed £4 4s. without written consent from parents or guardians. The dental room is within the college and belongs to the medical officer's suite. The medical officer attends for all anesthetic administrations. Hours of work are from 7 a.m. or 7.30 a.m., according to the time of year, and ends at 3.30 p.m., with intervals for meals." In the January number, you ask what is being done in Canada with regard to this important matter in such schools as Upper Canada College, Trinity College, Ridley College, and similar institutions. So far, if I mistake not, no arrangements have been made in these schools for systema-

tic inspection. Of Upper Canada College I can speak with certainty. It receives boys from all parts of the continent, many of them from small places where there are no dentists; others with teeth in bad condition through neglect. These boys must all be certified to, on entering, as to their physical fitness. Any peculiarities of constitution are carefully noted and the school physician attends regularly to see that the health of the boys is good. No similar attention is paid to the teeth. The procedure in this matter is as follows. Unless his parents see to it a boy waits until he has an aching tooth. Then he applies to the house master for leave to visit a dentist, who, before undertaking any expensive operation must, through the boy or the school, get the parent's permission. Surely this is an unsatisfactory and serious state of affairs. We know that failure to attend promptly to the teeth of children leads to not only great suffering, but often positive injury to health. It would seem that the plain duty of such a school is to make as good provision for the care of the teeth as is made for the rest of the body. The boys live in residence, and in many cases are absent from home for ten months of the year, so that even if they desired to do so, parents have not the opportunity for properly looking after the matter. But the difficulty arises from lack of knowledge rather than from carelessness. The general public do not realize the importance of this matter, and it has probably never been brought to the notice of the school authorities. Proper representations as to the need for dental inspection would probably lead to a satisfactory change.

R. M. PEACOCK, D.D.S.

Toronto, February 11th, 1901.

Obituary

DR. JOHN YOUNG.

Dr. John Young died January 17th, 1901, at Smith's Falls, Ont. He was born 1866, near the town of Almonte, Ont., and received his early education in the public and high schools of that town. Previous to taking up the study of dentistry he taught school for three years. In 1892 he began the study of dentistry in the office of Dr. D. McPhee, of Arnprior, and later transferred to the office of Dr. M. McKay, Pembroke. Entered the Royal College of Dental Surgeons of Ontario in the fall of 1892, and graduated after a very successful course, in 1895. A year later Dr. Young began the practice of his profession in the town of Smith's Falls, where his sterling qualities soon became known and appreciated. To quote from the *Rideau Record*: "It is certainly not too much to say that no death has ever caused more genuine regret, more poignant sorrow in the town. The sadness of it, the tragic circumstances and pity of it touch every one and evokes the tenderest sympathies of all for those who mourn for him as

son or brother, or as a nearer one still and dearer. He was one of the finest young men of the town and enjoyed the esteem and confidence of all who knew him. An indefinite something about him gave the impression that he was a genuine, candid, honest man, and such he was regarded." He was a member of the Presbyterian Church, a teacher in the Sunday School and secretary of the Board of Management.

Dr. Young met his death in a simple and peculiar way. It seems that he had his sleeping apartments above his office, and next to the bed chamber was a bath-room; an electric lamp attached to a long cord was carried from the bed-room to the bath-room to give light. The night of the accident the doctor was taking a bath and the lamp burned out, so he took hold of the cord and carried it out to the bed-room to get a new lamp. While walking out with both hands and feet wet he stepped on an iron heat register which immediately sent a hundred and ten volts of electricity through his body. He fell, and in so doing wound the cord about his body and knocked three lengths of stove pipe down, his foot remaining in contact with the pipes, thus making a good connection and allowing the electricity to pass through his body from about 11 p.m. at night until he was found dead the next morning, about 9 a.m. Where the socket of the lamp was in contact with his arm and naked body the skin was considerably burned; the foot that was in contact with the pipe was also burned. The verdict of the coroner's jury was death by accident from electric shock.

The funeral took place January 22nd, at Almonte, where a great number of the citizens of Smith's Falls went to pay their last respects to the departed. The dentists of Smith's Falls contributed a sheaf of roses and attended the funeral.

FOR SALE.

\$2,000.00 will purchase a fully equipped Dental Office in one of the best cities in Canada, cash practice of \$4,000.00 yearly, with splendid opportunity for the right man to increase it. Owner after eighteen years' practice wishes to retire. Purchaser must be an Ontario graduate. Address Box 30, DOMINION DENTAL JOURNAL.

SITUATION WANTED.

Frenchman, graduate from Paris and about to receive the degree of D.D.S. from one of the best schools in the States, wishes situation as an assistant with a good dentist in Canada. Speaks three languages. Good European and American references. Write, Helot, 81 Flournoy St., Chicago, Ill.

Dominion Dental Journal

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TORONTO, APRIL, 1901.

No. 4.

Original Communications

THE SURGICAL TREATMENT OF CLEFT PALATES.*

BY DR. TRUMAN W. BROPHY, CHICAGO,

Dean of the Chicago College of Dental Surgery ; Dental Surgeon to the Presbyterian Hospital,
and Professor of Dental Pathology Rush Medical College.

Delivered before the Toronto Dental Society, February 25th, 1901.

Mr. President and Gentlemen,—Before entering upon the discussion of this subject I desire to express to you my deep appreciation of the round of applause which you so heartily gave yesterday on the reading of a telegram from my distinguished colleague, Prof. C. N. Johnson, who was formerly one of your citizens ; and, while the Dean of this institution, took occasion to remark that you are not in favor of annexation to the United States. I desire to state that we have annexed, to a very great extent, citizens of your country, and in the institution with which I am connected at least six native-born Canadians hold high positions as teachers.

The subject of mal-formations of the palate, or defects of the palate—congenital clefts, accompanied with hare-lip—has called forth the very best efforts for their correction on the part of surgeons, extending over a period of many years. It remained, however, for the French dentist, La Monier, in 1764, to first suggest the propriety and probability of approximating the divided edges and uniting them. So far as surgical history informs us, it remained for Roux, in 1819, to make the first operation, immediately followed by Warren, of Boston, and Ferguson, of England, and, later, by many surgeons throughout the world. The complaint that was made by the early surgeons, and is still made by the surgeons of the present time, is the difficulty in approximating the edges of the palate ; and, when this was once done, frequently trouble arose in the cutting out of the sutures, and, consequently, failure of the operation. Professor Agnew saw fit to divide the tensor palati muscles with a view to taking off tension ; but in doing this he destroyed the functions

* Specially reported for DOMINION DENTAL JOURNAL by Dr. George Elliott.

of the palate to a very great degree. By this division, the muscle which arises at the scaphoid fossa of the sphenoid bone, and the cartilaginous portion of the Eustachian tube, passing downward and around the hamular process of the sphenoid bone, to be inserted into the soft palate—the division of this muscle near the hamular process is followed by a retraction of its segments to such an extent that the edges do not re-unite; besides, in the division of the muscle at this point we get a mass of cicatricial tissue, produced within the palate, which interferes with its function. It prevents the palate from retracting and contracting, and moving in a natural manner. Besides, the division of that muscle means something more, not only the absolute interference with the function of the palate, but it means that other function, which is to dilate the pharyngeal orifice of the Eustachian tube, is interfered with somewhat. The experience of all men familiar with palatal surgery is that defective hearing not infrequently follows the division of the muscles named. This defective hearing is due to the fact that the muscle is inactive instead of dilating the orifice of the tube, as it would, had it not been divided. The orifice closes or fails to open, and defective hearing is the result.

Dr. Brophy then proceeded to show, by means of slides projected upon a screen, how to avoid these lateral incisions—how to produce a better palate by employing another method, which is not followed by the formation of cicatricial tissue, nor does it interfere with the function of hearing.

THE PICTURES ON THE SCREEN.

1. Showed the ordinary form of cleft palate—congenital palate in an adult. Nothing particular, except the fact that we have defective arrangement of the teeth—an insufficient number of teeth, the lateral incisor being frequently missing and the other teeth in the immediate vicinity being irregular. Single hare-lip present. If bi-lateral, we have defect upon the opposite side also. It is a mistake to remove the intermaxillary bones, as is so frequently done, because they may almost always be brought back to their proper place and made to serve the purpose for which they were intended. We have depression of lip when these bones are removed, especially noticeable when we look upon it in profile.

2. Showed the instrument that Dr. Brophy uses for the purpose of removing the periosteum from the bone in the performance of this operation. Instead of separating the bones, we denude the periosteum from the bones and bring the two sides together; cleave the muco-periosteum, denuding the bone and bringing the parts together. He illustrated how this is accomplished by making a comparison of the elevated railroad in Chicago.

When the bridge is open for vessels to go through, we compare that to the cleft of the palate. In closing the palate—when we want to close the bridge—we denude all of the bone of the periosteum and then bring it down and approximate the edges, and in that way lower the elevation of the vela and secure coaptation of the divided edges of the palate.

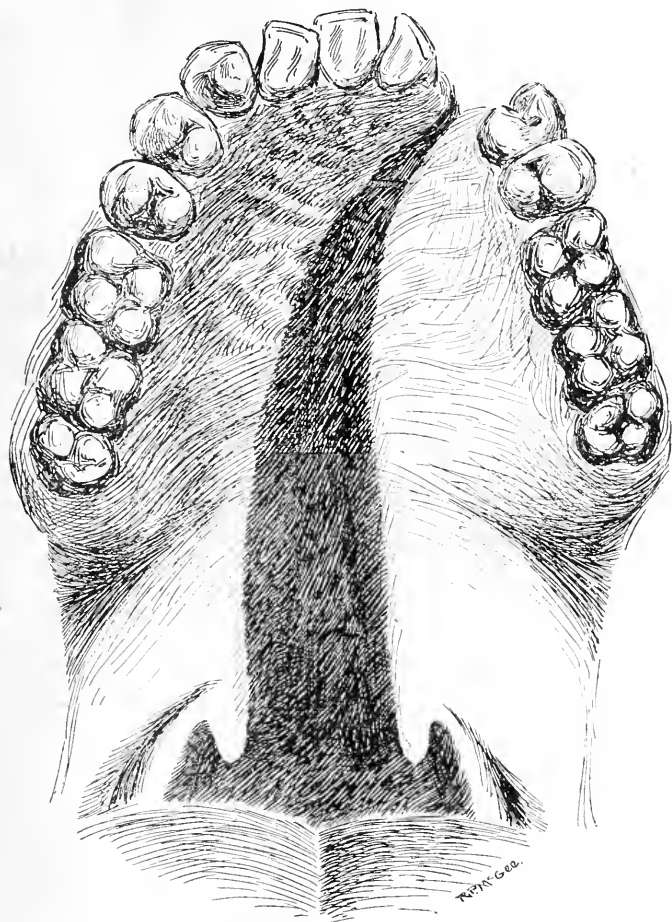


FIG. 1.

3. Showed the technic of surgery in the adult, or in patients over five months of age. Three operations Dr. Brophy makes for the closure of congenital cleft palate. He now described the operation in the adult. The picture on the screen shows left hemisphere of the face. Longitudinal section of the bones is seen. He showed where the muco-periosteum was carried away

from the bone and brought downward, so as to lower the vela and make it possible to bring it over and approximate with the opposite side. He here called attention to one special means of approximating the soft parts without lateral incision. After the bone is denuded, we go back to the posterior border of the horizontal plate of the palate bone. Here the muco-periosteum clings to the superior or nasal surface of the bone, and, consequently, the palate cannot come over to unite with the opposite

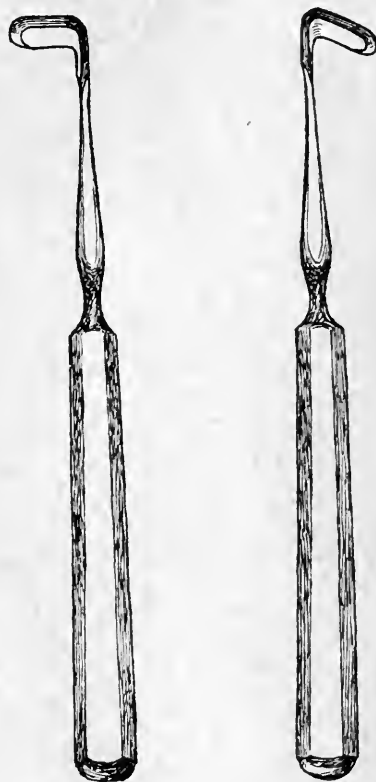


FIG. 2.

side. When it came to the approximation of the edges of the soft palate, Sir William Ferguson thought it was necessary to make lateral incision to relieve tension. He did not well realize that the adhesions of the nasal muco-periosteum prevented bringing the parts together; hence he made lateral incision. To avoid making these lateral incisions—to avoid disturbing the palate at all—and to avoid producing any cicatricial tissue, we adopt a very simple plan. We take hold of the palate at a point indicated by the speaker and lift it up a little, and with a pair of scissors cut off, on both sides, the nasal muco-periosteum just at the distal

border of the horizontal plate of the palate bone. That enables us to bring the part immediately over to the opposite side. Consequently, when you lift that part away and draw it over, thereby the palate lengthens so as to produce a better palate, and, at the same time, we avoid making these incisions through the tissues, an important step in producing a good palate. The cicatricial tissue leads to a dense, stiff, almost unyielding mass, which really makes a very defective palate indeed; and it is through that—through the fact that these tissues are so rigid and unyielding—that so much criticism has been made upon the surgery of the palate. The gentlemen who are devoting much time to the construction and consideration of artificial vela, hold that up as an objection to palatal surgery. Having the muco-

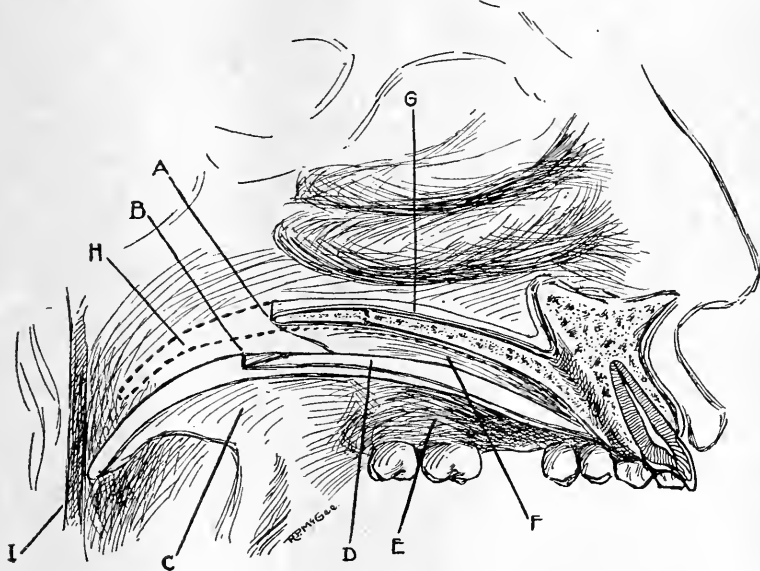


FIG. 3.

A. Posterior border of horizontal plate of left palate bone. B. Velum separated from muco-periosteum of nasal surface of palate bone. C. Velum separated from the hard palate, and the palate lengthened so as to restore palatal function. D. Periosteum denuded from hard palate. E. Palatal mucous membrane. F. Bones denuded of membrane. G. Nasal muco-periosteum. H. Position occupied by palate before operation. I. Posterior wall of the pharynx.

periosteum denuded from the bone up to the incisive foramen—the membrane has been cut off on the superior surface of the palate, the nasal surface, and then the edges pared—we come to the soft palate, and here we avoid removing any tissue whatever. Instead of doing this, as was formerly done, we pass a knife along lengthwise of the edges of the palate, splitting it, thus securing a freshened surface. The tissue may be brought over as soon as the incision is made along the border of the cleft. We get union and avoid the loss of any tissue whatever in that part of the

palate. In the soft palate we almost invariably get union. After we have brought these parts over together, if we have carefully approximated the edges of the periosteum, we may rely upon producing a good, hard palate. One of the functions of the periosteum, as you know, is to repair and replace bone. When we bring the mucous membrane of the periosteum over and unite it with the opposite side, we may rely upon getting a new, hard palate.

4. This picture shows surgery of the palate, with the adaptation of sutures, from the distal aspect. We have here lifted the

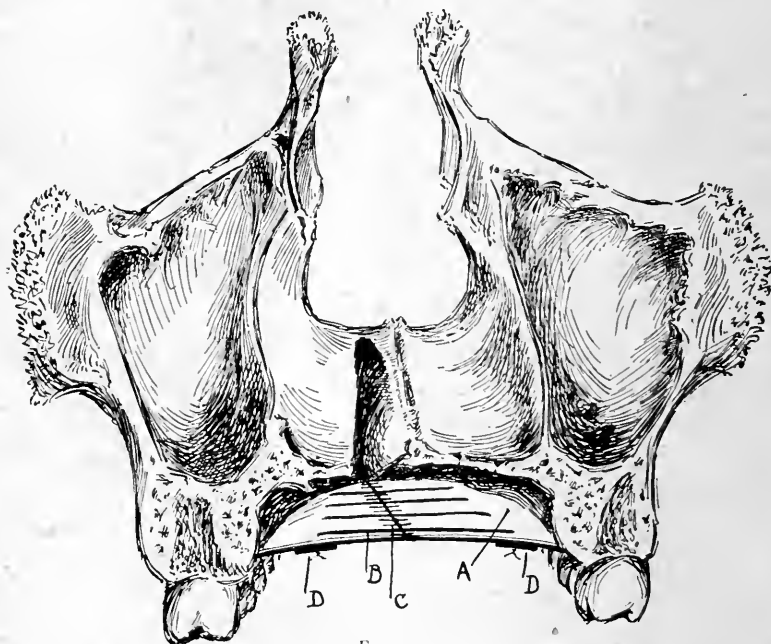
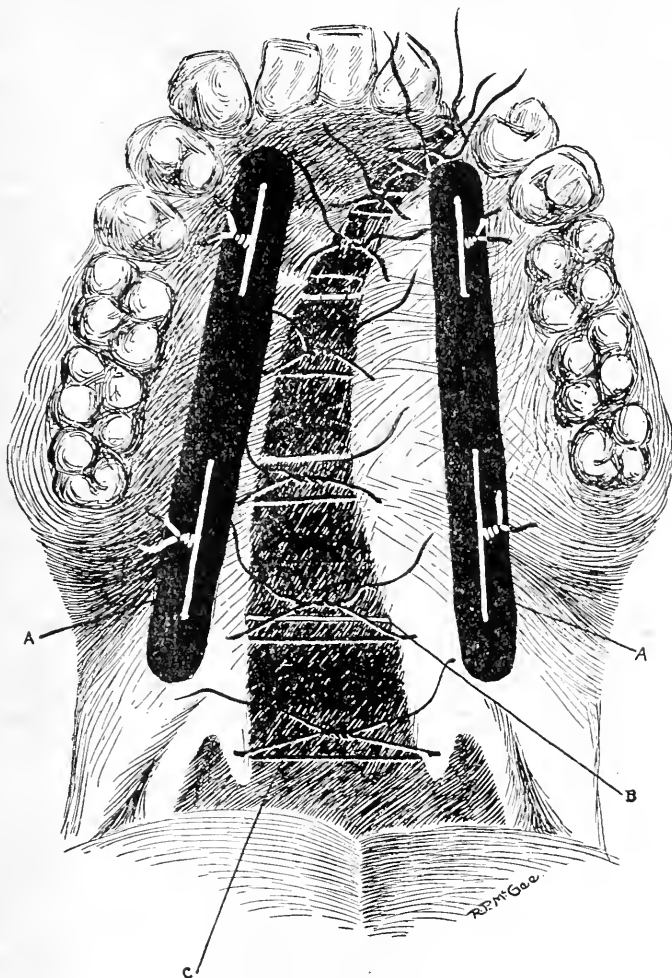


FIG. 4.

A. Muco-periosteum dissected away from the palatal surface of the superior maxilla. B. Silver tension sutures. C. Coaptation sutures. D, D. Lead plates.

muco-periosteum away from the bone on either side and brought it over so that it meets the opposite side. We have introduced straight silver sutures—No. 22 silver wire, according to the American gauge. Then we have lead plates of the same thickness—22 American—and the sutures twisted together with tension made upon them so as to hold the parts steady. In the picture you will observe coaptation sutures not having any strain upon them whatever. It is hardly possible to estimate the value of these silver sutures thus adjusted. The sutures are passed directly through the tissues. They are carried through and twisted upon the lead plates; and it is these which hold the parts in quiet

contact until union is complete. The lead plates act as splints. This is in accordance with an old principle in surgery—when a part is in an abnormal condition, put it to rest. We put these parts to rest; we keep them quiet. We introduce an appliance which will make the cutting out of the sutures absolutely impos-



FIGS. 6 AND 7.

A, A. Lead plates. B. Silver tension sutures. C. Coaptation sutures not yet tied.

sible, which is a consideration of inestimable value. There is no way by which these sutures could get out. A general slough might take place and dragging down of the tissue, but almost always they remain until the tissues in the median line unite.

5. Congenital cleft palate. This picture was taken from the

work of Dr. Kingsley, of New York, a very valuable work on the subject of phonation. The photograph was made from his book, showing congenital cleft palate, and showing outlines of an obturator which he constructed. In such cases obturators are unnecessary. A surgical operation would always be much better.

6. Picture showing the adaptation of the lead plates and silver

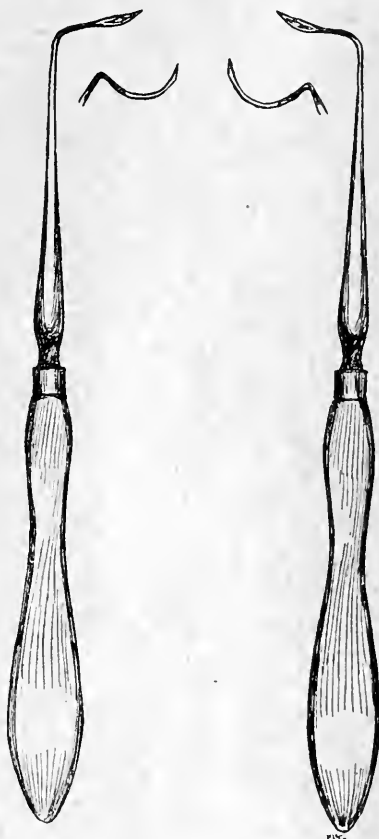


FIG. 8.

sutures from palatine surface. The sutures are carried through the lead plates and the wires twisted together ready to be bent up.

7. Here you will observe the coaptation sutures introduced. The coaptation sutures should be introduced before the lead plates are finally set up to their places. Leave the plates outside of the mouth until the coaptation sutures are introduced because you can put them in more easily. Introduce the sutures first, and leaving them alone so as not to lose any of them and allowing them to remain until we have set the plates up, and brought the tissues in contact, and then finally make fast these sutures.

8. Showed suture needles especially adapted to this work of carrying the sutures through the palate. We cannot freely carry silver sutures through with a needle, but with this we carry a strong silk suture through, and having a loop through to the median line, slip one loop through the other loop, and bring one

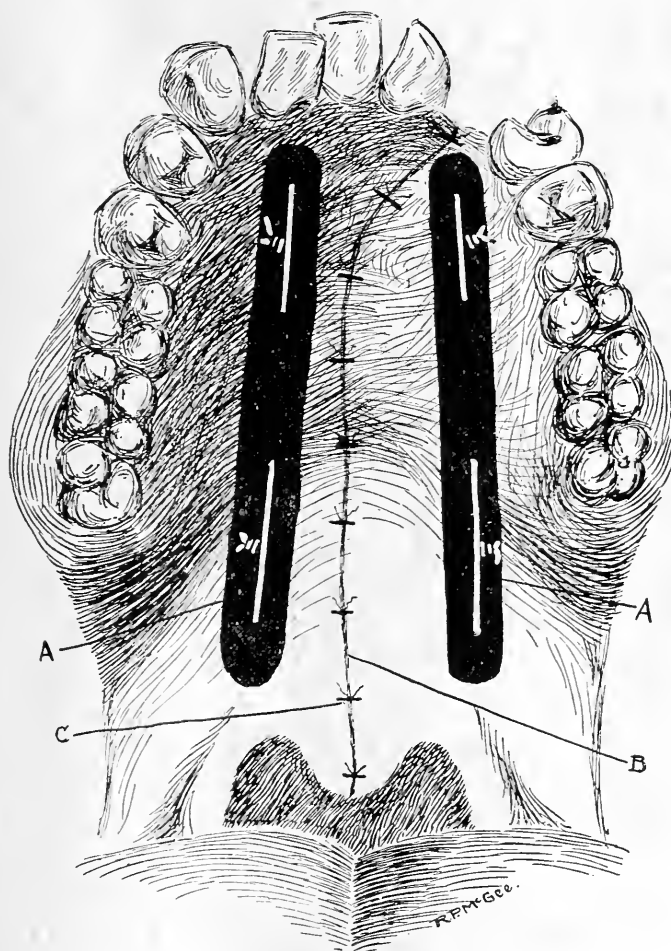


FIG. 9.

A, A. Lead plates. B. Closed palate. C. Coaptation sutures.

all the way across. Now we have introduced the silver suture, drawing out the slip and leaving the silver suture in its place. The silk acts as a provisional suture. Introduce the needle at a point easily seen, carrying it through and upwards and out at the opposite side.

9. This picture showed the parts adjusted. The lead plates in

little different position. The wires are twisted on one side and then on the other, and then we have forced the two sides together. We have the parts united.

10. A drawing from life, illustrating defective palate, one upon which operation was made many years ago. The patient had to overcome this defect by the use of an obturator. One of the



FIG. 10.

Drawing from life, showing congenital defect of velum and complete absence of azygos uvula (

demonstrators of the College brought him to me (Dr. Brophy) to know if I could do anything for him. I would lengthen his palate. We proceeded to lengthen his palate. In adults having cleft palate there is development of the palato-pharyngeal muscles far beyond the normal. They are broader and stronger and thicker. There is a contraction, a mobility and activity in these muscles, which we do not have in those having normal

palates. A number of years ago Dr. Brophy decided that in cases of this character, in all cases of short palates, he would splice these muscles, bringing them up and uniting them so as to lengthen the palate to a considerable extent. We made an incision, taking away about two-thirds of the palato-pharyngeal

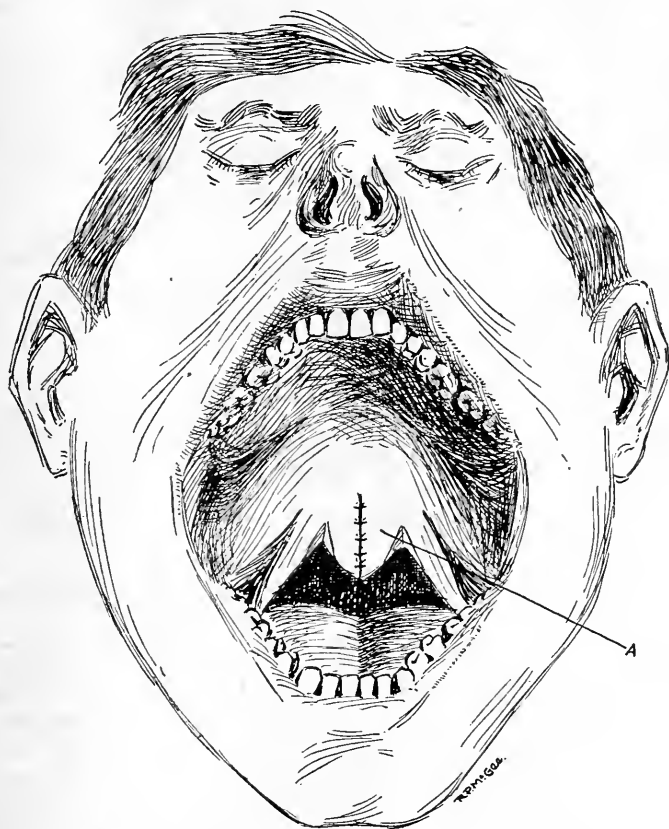


FIG. II.

Drawing from life of the same case after operation for lengthening velum and making uvula by uniting in the centre one-half of the over-developed palato-pharyngeal muscles (A).

muscle and then brought it over, freshening the edge and uniting it with the opposite side.

II. Shows the results of the previous picture, making a very good palate for the man; and he said he would not, under any circumstances, go back to the artificial vela. There is no comparison between the artificial vela and the palate that is natural, or nearly so. The surgeon would not attempt to supply an artificial limb if it was within his power to preserve and make useful the natural one; and so it is with the palate when with

surgical methods we are able to produce one which is natural, and one which will enable the patient to go on through life without being subjected to all the embarrassments that one is subjected to who is tied down to an artificial one. As in the case of the general surgeon so it is in the case of the palate. If we have not the ability to produce a palate of the tissues to serve a patient then we will, as a last resort, substitute an artificial one.

12. Now we come to a part of the subject more interesting to me, said Dr. Brophy. It is transfixing of the bones in infants, and the making of palates for them. When this matter was first

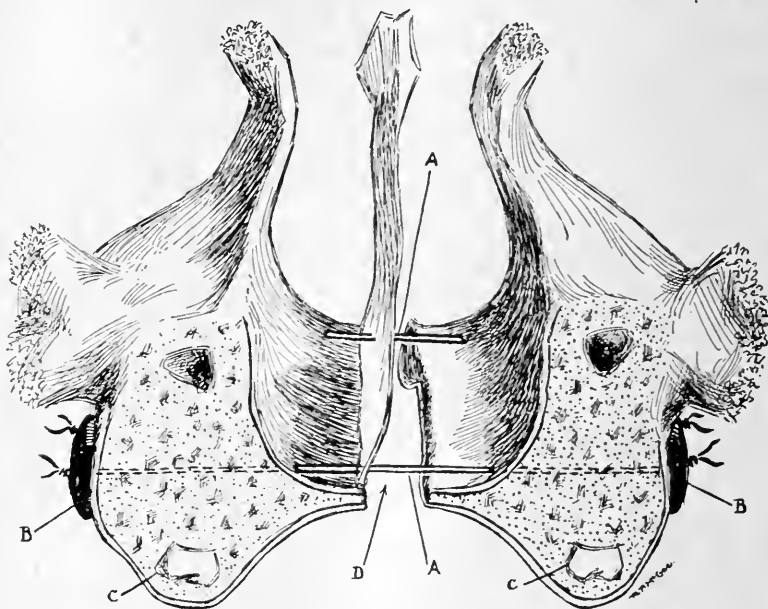
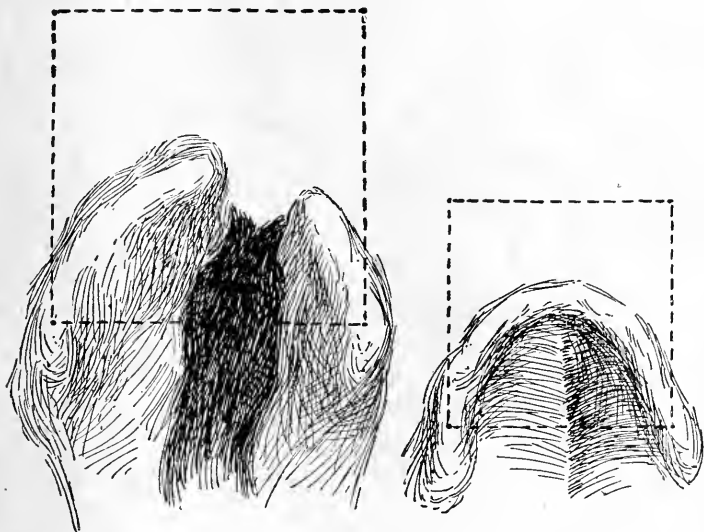


FIG. 12.

A, A. Silver tension sutures. B, B. Lead plates. C, C. Germs of the first temporary molar teeth. D. Cleft palate.

suggested some held up their hands in wonder and disapproval. Does it not seem reasonable that we may bring these bones together in early infancy, when more than half the tissues are organic, when the bones are scarcely one-half calcified, saving these children embarrassment and helping them to speak? If not operated on in early infancy when they go to school, when they have reached early youth, or manhood or womanhood, they find that they are practically isolated from the rest of humanity. It is possible to successfully operate in early infancy. One day Dr. Brophy brought before a class of students, his first patient, a little mite of ten days old. The patient was anesthetized, and the bones were forced together and united. This case was reported

at the Dental Congress at Chicago in 1893, and there was great criticism at the meeting. Kingsley, in an article published later, declared that Dr. Brophy had operated without the child's consent, and that such operations were not warranted, and that the defect or abnormality would be greater than that which had previously existed. The abnormality would be worse. The picture shows a vertical section in the superior maxillary bones of the child. The antrum shows up as a black spot. It is very small indeed in a young child. Section shows nasal cavity and vomer. This is in a child under five months who is as amenable to successful surgical treatment, as amenable to success, as any other surgical work is.



Drawings from careful measurements of casts from life, showing relative positions of upper and lower jaws in the case of cleft palate in a young child. The dotted squares are made in exact proportion to the width of the respective alveolar processes at corresponding points. The large square is the width of the cleft greater than the smaller square. When the cleft is closed the squares will be of equal size, and consequently the teeth will occlude normally.

At the meeting in Paris last year Dr. Brophy presented some statistics of 211 operations he had performed on children under six months without a death. It is only justice, however, to say that the second patient upon which he operated after returning home had died. He had done a total of 236 operations up to the date of the Dental Society's meeting under six months, and but one death; and it would be only fair to say that in that case the child made a good recovery from the operation, but ten or twelve days thereafter developed pneumonia and, later on, died. The parts had united, but the child was taken ill and died. French surgeons claim they operate only on children two years and up. They abandoned that and selected from the ninth to the fifteenth year. It was a matter of great satisfaction that many of the surgeons

there had not considered the matter from this standpoint. The picture shows the silver suture carried through the substance of the superior maxillary bones. Dr. Brophy here showed instruments adapted specially for this work. Showed Dr. Logan's forceps for forcing the bones back and bringing the parts into apposition. The instrument is the invention of Dr. Logan, of Chicago, who, for a number of years, has been Dr. Brophy's assistant. In the further consideration of this method, we carry the sutures through in the manner described: bring one loop through the other, and then attaching to that the strong silver wire, No. 20, American gauge. It is necessary to have a strong wire, and No. 17 lead. The lead must be strong, because you cannot allow the

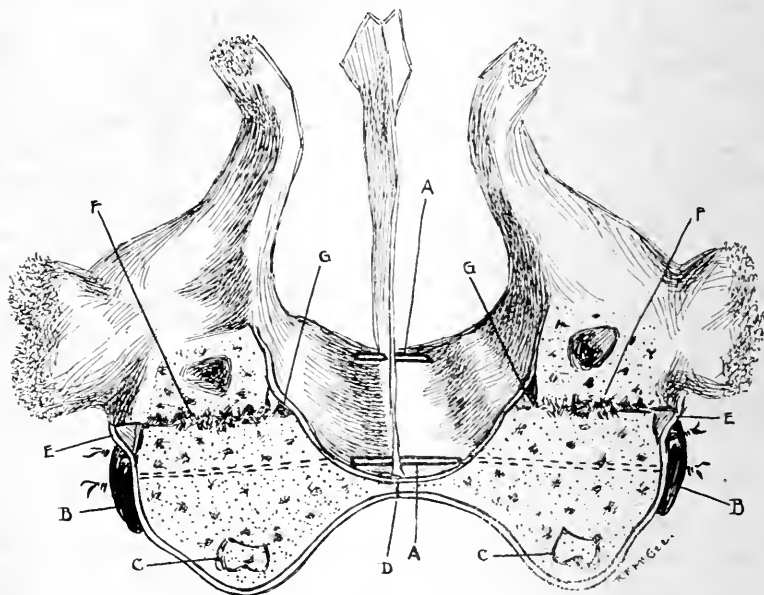


FIG. 13.

A, A. Silver tension sutures. B, B. Lead plates. C, C. Germs of first temporary molar teeth. D. Cleft closed. E, E. Muco-periosteum, forming extended wall of the triangular space by forcing the lower fragments of the bone inward. F, F. Lines of fracture made by approximation of the palatal process. G, G. Triangular space on nasal surface of bone made by approximation of the palatal process.

lead to bend. Do not depend upon the strength of the wire to draw the parts together. We make use of pressure, either by the hands or the forceps, and then force the parts towards each other, freshening the edges and freshening them well. They must absolutely meet. When the vomer comes down and forms a portion of the hard palate, we might find the hard palate almost together, providing we consider the vomer, or that bent portion of it. The bringing of the vomer over, and uniting the hard palate to it, would be a mistake, because in doing that we would have the soft palate widely separated. Make an incision through the vomer,

lifting it away and bringing the hard palate proper, or the two sides into contact. If we do that we are able to force the tuberosities of the maxillary bones together. The objection to using a portion of the vomer is that we leave the tuberosities of the bone too far apart. It does not produce a good palate. In almost all cases of congenital cleft palate there is sufficient tissue, the defect is owing to the separation of the bones and the broadening of the upper jaw.

13. Shows that the parts have been forced so that they will meet, also shows black line which has been caused by the breaking of the bones. In cases where we cannot bring these bones into proximity we lift up the cheek and with a strong knife carry it through the bone above the lead palates and cut it off. After we carry it through the part of the bone which gives the greatest resistance—the malar process—and which prevents the bone coming over, with an instrument pry it over until we bring the parts into contact. A distinguished surgeon of Paris, in his discussion of this subject last summer, most heartily endorsed this method of

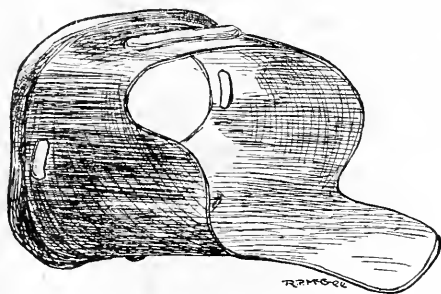


FIG. 14.

operating. The patients did not die, because they were so young that the nervous system was not developed sufficiently to make it possible for them to sustain a serious shock. Professor Sebelean declared: "Your patients do not die because you do not divide any vessels; you do not produce any hemorrhage. If we do not divide an artery we divide some of its branches." Young children bear hemorrhage very poorly, hence they die. The surgeon in Paris said, "You avoid the vessels and so your patients recover, because there is no hemorrhage." We have little hemorrhage in these operations. If we get hemorrhage, what do we do? We have no hemorrhage except what little we get from the paring of these edges; if we should have hemorrhage we control it promptly by the use of hot tampons, sponges or gauze, out of water at 170 degrees, and thrust those hot sponges into the wound; hemorrhage ceases, and we go on and complete the operation. This expedient has proven very satisfactory. The surgical procedure is fixed beyond the possibilities of doubt; it has passed beyond

the experimental state. When surgeons everywhere become familiar with it, it will stand and be a fixed operation, and surgeons everywhere will operate by this method. The child grows up stronger and better after the palate has been closed. Some of the reasons why the operation should be done in early infancy are : The parts are soft and easily manipulated in early infancy. Children, during parturition, sometimes undergo quite serious wounds.

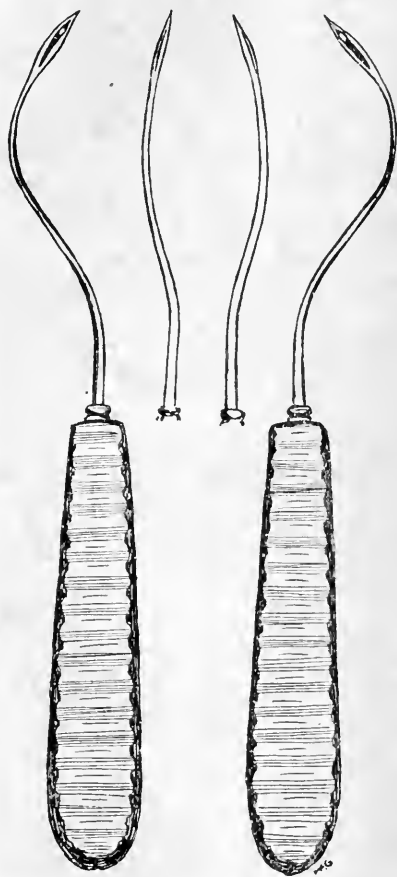


FIG. 15.

Cranial bones are displaced and carried out of position. The displacement of bones in early infancy is often great, yet they recover normal form. In one so young there is scarcely any impression made upon the vital parts. The conditions are favorable and the operation advisable.

14. Showed an oral speculum, used for the purpose of holding the tongue down, illuminating the mouth and giving access to it.

Dr. Brophy seldom uses it himself in operations on the hard palate, but upon the soft it is necessary. He contents himself with closing the hard palate, and lifts the soft palate over in

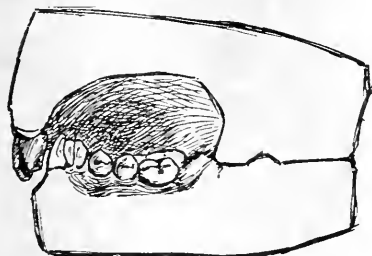


FIG. 16.

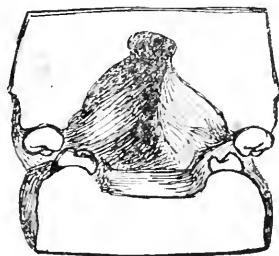
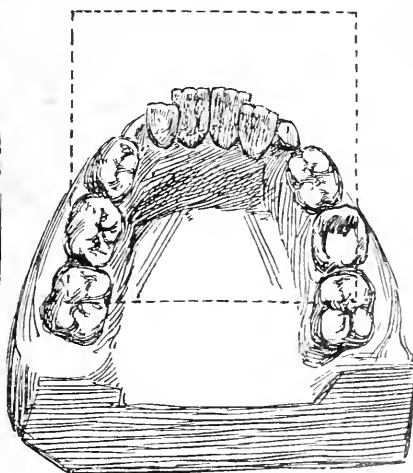
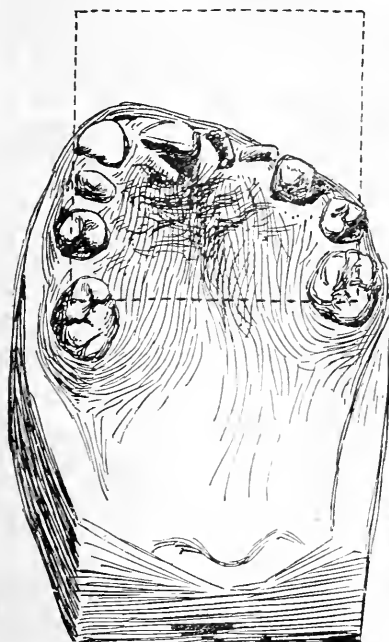


FIG. 17.

R. P. M. G. C.

another operation, to be made two or three or many months later. He does not see fit to operate on both the hard and soft palate at the same time; we leave the lip operation for the last.



R. P. M. G. C.

FIG. 18.

Why should the surgeon close, to some extent, the opening through which he must make the operation upon the palate? Why should the space be shut off first, and after the door is half

closed, so to speak, commence at the inside operation. When you introduce the posterior needle you need all the room you can get to carry it through, so that the operation on the palate should be first done, and then the operation on the lip may be made, because you have easy access to it. The oral specula can be made of different sizes.

15. Showed needles, made strong because we put them through the bone itself and carried out at the opposite side. Just the right form and shape so as to be able to guide them, and watch that they come out just right.



FIG. 19.

16. Casts projected upon the screen which will be rather convincing to any one who may consider the subject as to whether the operations should be made in early infancy for closure of the palate. Shows cast of the mouth of a boy twelve years old, in whom the teeth protruded. All these teeth lap over the lower ones. The lower teeth are not visible in one cast. The superior teeth lap over the inferior ones. The anterior ones are not visible. Succeeded in bringing the teeth so that they occlude with the lower teeth.

17. Shows posterior view of same condition; they lap outside. Had this child been operated on while young his teeth would have occluded quite properly.

18. There is a powerful argument in these two pictures. Proves that this does not lead to deformity in forcing the bones together; from the mouth of a boy five years old. Note the difference in the size of these two squares. Note the difference in the width, and measure the distance between the hemispheres of the palate. We find that the difference of the width of these two squares is just the difference in the width of the borders of the palate. This is very common. This means that while Dr. Brophy had the making of this operation for years he was willing to admit that there would be a very greatly contracted arch. To



FIG. 20.

his surprise he found the teeth occluded very naturally with the lower ones. We find that some of the germs of the teeth are lost—some may pop out during the operation. The permanent teeth will almost invariably come in right. When the teeth come in they seem alright except that they are sometimes flattened somewhat.

19. Photograph of a child six weeks old, which had a congenital cleft palate, and the outline of it we see in the picture quite well. There is also unilateral hare-lip on the right side. Dr. Brophy's observation has been that in about 80 per cent. of children who have hare-lip it appears on the left side. In this case it is on the right side, and there is an enormous fissure here in the palate.

20. Showed the condition of the child's mouth a week after the operation. Showed lead plates in place, and the palate united. The cleft is perfectly closed all the way back. The cleft was as large as ever Dr. Brophy had to deal with.

21. Shows casts of mouth of same child. In this case used four silver sutures instead of two.

22. Patient pictured here represented enormous cleft of palate ; vomer separated from both sides, projecting intermaxillary bones far beyond the end of the nose. The first step was to close the hard palate ; next step was to operate on the projecting intermaxillary bones and bring them into place. It would have been

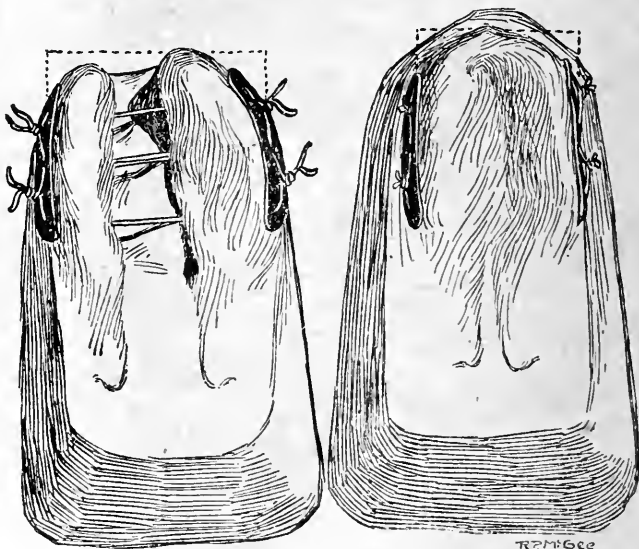


FIG. 21.

a mistake to cut them away because we wanted those to fill up the space in front. The intermaxillary bones were carried back.

23. Showing the prominent intermaxillary bones and V-shaped piece of bone taken out and then sutures of wire put in and the intermaxillary bones forced back and united. We want the teeth that are in the intermaxillary bones.

24. Shows cast of the mouth of a child about thirteen years of age. Dr. Brophy operated on this child when she was about ten days old. There was irregularity of the teeth throughout, which was due to the tension of the upper lip ; the child really had no upper lip. The tension was great and literally forced the teeth into the position they occupy. The molars of this child have just developed. The child has now a good palate and articulation is perfect, and she is quite an accomplished vocalist for one so young.

25. This little girl was at the meeting of the American Dental Association at Niagara Falls in 1898, and when she was placed



FIG. 22.

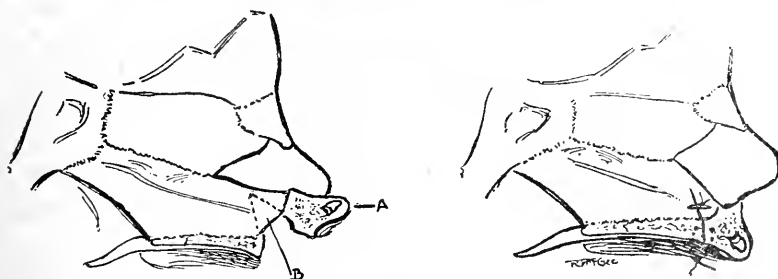


FIG. 23.

A. Protruding intermaxillary bones containing germs of the temporary central incisors. B. V-shaped incision in the vomer, indicated by dotted lines.

before the audience a gentleman rose and asked her to pronounce a word. "Little girl, will you please say 'Kingsley?'" "K" and

"G" are difficult letters for persons with cleft palates to pronounce. The little girl clearly and distinctly, the first time in her life so far as I know, and in a voice heard all over the room, said "Kingsley." That was the answer to Dr. Kingsley's criticism of my method.

26. A picture of Dr. Garrison, of Philadelphia, upon whom Dr. Brophy pronounced an eulogy.

The discussion was opened by Prof. A. Primrose, of Toronto University, who highly complimented Dr. Brophy upon his lecture,



FIG. 25.

stating that he must have had an experience that is almost unique in the treatment of cleft palates. Dr. Primrose thought there was nothing to be criticised, and all that was left was to compare the results of Dr. Brophy with those of Wolff of Berlin, who had performed 290 of these operations. Wolff, out of 296 cases, had a mortality of 10.6 per cent., while Dr. Brophy has a mortality almost nil—a mortality which amounts to something less than one-half of one per cent. That, thought Dr. Primrose, speaks for itself. Dr. Wolff's cases refer to and include all ages, and are not referable

simply to very young children. The mortality is reduced in proportion to the age of the infant, practically; and in operating in young infants the mortality is very much less than in operating on older children and in adults. Dr. Brophy's method in connection with operating on the soft palate, in avoiding the laceration of tissues, must be a great step in advance. Dr. Primrose then gave a clear demonstration on the blackboard of the anatomical conditions present in these deformities, confining his remarks especially to the intermaxillary bones.

Dr. McLaughlin followed Professor Primrose in the discussion. He congratulated the society at the opportunity of having this matter put before the profession of dentistry so prominently and so clearly. He thought that it was a subject with which the profession in Ontario was very little acquainted, particularly the operation in early infancy. He had thought up to the present that the field open to the surgeon was very limited; that the field was confined to congenital cleft palate in the adult, and that the operation might succeed from a surgical standpoint, but not from a practical standpoint. The great result aimed at was not gained, *i.e.*, correct articulation in the patient; but now that has been dispelled by Dr. Brophy.

Mr. I. H. Cameron thanked the society for the privilege of being present, and stated he was not unfamiliar with the work of Dr. Brophy. He thought that Dr. Brophy's friends were wrong in telling him there was no precedent for his operation. He considered that Hainsby's truss had been invented for the purpose, and it was found that this truss brought the bones together and approximated the edges of the cleft. He thought there were lots of precedents for the use of pressure in the approximation of the edges of the palate. There were many interesting points Mr. Cameron would have liked to have alluded to in commendation. He heartily agreed with what Dr. Brophy had said in his eulogium of Dr. Garrison, of Philadelphia.

Dr. Sparrow asked Dr. Brophy why he used lead plates in preference to plates of other metals.

Dr. George A. Peters considered that they had had an admirable and useful address from Dr. Brophy, which left very little to say in criticism, and very much to say in commendation of it. He was very glad indeed to find that he does not remove that intermaxillary bone. Dr. Peters had operated on a great many cases in which it projected out in a very tempting way. In his experience the removal of V-shaped piece has not been, in his hands, sufficient, but he has taken out a quadrilateral piece. Dr. Peters stated he would like to know a little more about the treatment of the vomer—does Dr. Brophy freshen the edge of the vomer when that is free? Dr. Peters also referred to the operation for hare-lip.

Dr. Brophy in reply.—Referring to the statistics of Dr. Primrose, Dr. Brophy stated that he had mentioned only those operations in young children under six months. The number of persons older than that, including the young children upon whom he had operated up to that day, was six hundred and five. The question of speech is a very intricate one. While Professor Kingsley, of New York, has dealt with it from all standpoints, he could not state why in certain cases articulation would be defective, and often in persons who had good palates; he could not say why patients with defective palates sometimes had good articulation. He has seen persons with clefts of the character first spoken about who spoke fairly well, and others having clefts whose articulation was so indistinct that one could scarcely recognize what they were trying to say. Largely speaking, it is a matter of education. The reason why Dr. Brophy uses lead plates is because they are most easily adapted to the parts, and then lead is tolerated so well by the tissues. The lead put in contact with the tissues may be so nicely and easily adapted to the parts. It just embeds itself a little way along the entire length, and consequently the sutures cannot cut out. That is one of the values of lead. Silver and gold and platinum would be too stiff. The lead is easily adapted so as not to cut into the tissues. Dr. Brophy stated that he enjoyed the remarks of Mr. Cameron very much. This idea of transfixing the bones and passing sutures through the bones first suggested itself to Dr. Brophy when attending one of Professor Sayer's clinics in New York, where a little child a few weeks old, with congenital cleft palate and double hare-lip was operated upon. It then occurred to Dr. Brophy that all that was wanted to make the operation a successful and perfect one was something to keep the bones together. Twelve years afterwards he perfected that idea. Referring to Dr. Peters remarks he said that he would accomplish very good results if he got well up into the nose.

The meeting adjourned to the Sick Children's Hospital, where Dr. Brophy performed his operation on a child, a patient of Dr. N. A. Powell.

TECHNIC OF ORTHODONTIA.

(Continued from page 100.)

LECTURE NO. 3.—MAKING OF NUTS.

Gentlemen, we usually make nuts from nickel—an American five-cent piece. They are made in two sizes, first stamped out with a nut die. We have a nickel here that has been filed on both sides. Do not file the nickel you make the nut from—this makes it too thin for the best kind of nut. We will try to stamp one of

these out. The nut die stamps out four nuts at a time. Hold the nut die firmly down upon the nickel and strike it. As far as possible, do not let it jump around. You will have four nuts, each one of them centre punched, this stamping process saves a great deal in finishing down the nuts. You understand what I mean by centre punching I hope.

The next step is to drill holes through where these centre punch marks are. Oil the nickel, use the twist drill—we are using No. 16. You may use the lathe for holding your drill, or use it in the engine (as we have this). You will have to be a little bit careful to cut the hole through straight. You had better put the nickel in the pin-vice, then you can hold it so as to cut through straight. (You notice the drill has stuck in the nickel.) We have two holes drilled now, the next step is to tap these holes. Put the tap in the pin-vice (hold the nickel in a pin-vice if you have it), and now cut a thread, oil it, cut back and forth slowly until you cut the tap right through the nickel. This seems to be cutting very nicely.

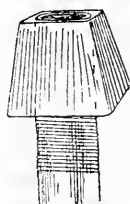


FIG. 10.

The next step will be to put the nickel in the vice and saw out the nuts with the hack-saw. Now we have the nut sawed out we put it on the end of the tap, which has been made for a nut-holder, screwing it on in this way. Now we trim down the nut with a file. While I am trimming this down I will send around a nut with another nut finisher, that you may look at it. The nut should be made even, no sharp corners upon it, larger at one end than the other. The large end is the one which faces down against the tubing when in use. (Fig. 10.) Now, I do not want to see anybody put in a case with the nuts all kinds of shapes and sizes, if they do they may depend they will be returned with thanks. Now, then, you take the file and take all the sharp corners off, so that it will look as if somebody had made it.

LECTURE NO. 4.—MAKING OF A WRENCH.

At our last meeting we made a nut; to-day we shall make a wrench. The blank you buy is an octagonal piece of steel three-sixteenths of an inch in diameter, and about seven inches long. Hold one end of the blank in the flame until red hot, and then

with a hammer give it a slight bend at one end. The opposite end may be given a greater bend. Now, with a file, cut down the shank and form up the nose of the wrench. With a thin file cut a slot in the end the size of the nut to be turned. The jaws should be nicely rounded and thin, because a wrench has to be used in some very narrow places. (Fig. 11.) While I am filing at the wrench you may look at this one that I made this morning for one of the class. On the opposite end of this blank make a wrench for small nuts. Be sure that the wrench you make is well finished and polished.



FIG. 11.

Pinching bands around teeth is very important. Select the thickness and width required for the case according to the stress required and the room between the teeth. In some cases it is necessary to use very wide banding, as in contouring appliances. Pass the band between the teeth, one side at a time, and then approximate the ends with the fingers. Now with the pliers grasp the band ends, one with each jaw of the pliers close down to the tooth, gradually close with firm pressure. (Fig. 12.) Remove the band carefully so as it may not be put out of shape, number or mark it. We shall pinch a band for this central and solder it. Approximate the ends as they were on the tooth, place a little



FIG. 12.



FIG. 13.

borax at the point where we desire the solder and nowhere else. Grasp in this way with the soldering tweezers, and place the smallest piece of solder you ever saw on the joint so that it may touch both sides. Note now that we start the flame well down on the shanks of the tweezers, in this way the solder will coax down the joint rather than spread up around the band where it is not wanted. (Fig. 13.) You see now that this band is soldered and will exactly fit the tooth about which it was pinched. A band may be forced up upon a tooth by placing a dull chisel against the side of it at the tight points and slightly tap with a hammer. You see now how nicely this goes up and fits this tooth.

LECTURE NO. 5.—MAKING APPLIANCES.

At the close of our last meeting we finished the soldering of a band; to-day we shall show how to keep the proper relation of several bands to each other, and make a simple appliance that will demonstrate the technic. Upon the teeth of this flexible rubber tooth-form I shall pinch four bands, one for each first molar and one for each cuspid. The aim of the appliance we shall construct will be to spread the arch by means of a jack-screw extending from opposite sides of the mouth. We shall begin with the cuspids. In cases where teeth are conical, as the cuspids are, it is well to pinch a little crimp in the banding this way, and solder it. (Fig. 14.) This triangular piece that is crimped up will come on the lingual of the tooth when in place, and when the two ends come out on the labial surface they will not tend to meet up over the labial gum, but will rather come around the tooth at right angles to its long axis. (Fig. 15.) The bands now being all pinched and marked we shall proceed to solder. While I am at this I desire you to look at this appliance that one of the graduates of last year made

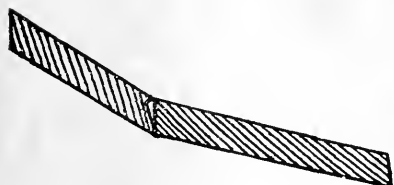


FIG. 14.



FIG. 15.

for a similar case to the one I am making to-day. Now the bands are all soldered and we shall replace them upon the teeth upon which they were originally pinched. If there has not been any excess of solder used they will fit on easily and yet snugly. Note how they all fit now. Let me trim these projecting ends a little, but not too much, as we wish these to more or less assist us in locating the proper position of the bands if they do not come off in the impression. Plaster-of-Paris is the most reliable material for taking these impressions; but compound will do very well in most cases if properly handled. The impression-tray should have a square rim, as you see here. The compound is soft now and we press it home firmly, and as soon as it is hard carefully remove it so that the bands may come off the teeth and remain in the impression. You see they have all come off but one band. This I shall remove from the tooth and place in its proper position in the impression before the compound is perfectly rigid. At this time the band may be pressed into place without disfigurement, which cannot be done if the compound is allowed to get perfectly hard before it is attempted. The bands in position, and notice

having been taken of whether the compound has been drawn from the tray or not, the impression is filled with investment material, *e.g.*, plaster and sand ; plaster, pumice and marble dust ; Portland cement, or any of the prepared investment materials on the market. It is well not to use too much investment material, as it will require too much time to raise it up to the soldering temperature. All that is required is to get these bands upon the teeth in a model in the same relation to each other that they were in when on the teeth in the mouth. This whole process that we are going through to-day is just the same as if it were being done for a patient. We will continue this at our next meeting.

LECTURE NO. 6.—MAKING APPLIANCES (*Continued.*)

At the close of our last lecture we had just poured this impression, now we shall remove the compound and trim the model. Here you see all the bands in their proper relative positions, just as they were on the original tooth-form. After cleaning the lingual surface of the cuspid band in this way with a small file, we shall attach the end of this D-wire, with flat side next to the band. To do this dip the end of the wire into borax, and then upon this take up a small piece of solder and melt it, dip again into the borax, and after heating up the cuspid tooth and band place the end of the wire, upon which has been melted the solder, in such a position that the length of the wire will pass closely by the band on the first molar, at which point it is later to be attached. This wire is best held in the fingers while the end is being soldered to the cuspid band. As soon as this is done the wire may be pressed in against the molar band, which is cleaned, boraxed and soldered. The wire reaching along the lingual sides of the bicuspids must be bent so as to touch these teeth. The end of the wire extending beyond the molar is now cut off. Upon the opposite side we shall follow through the same process. It is now necessary to select the point upon these bars reaching from the cuspids to the molars at which to place the ends of the jack-screw. This all depends upon what is desired ; if the cuspids need more spreading than the molars then the jack is placed nearer the anterior part of the mouth than would be the case if the molars required the most spreading. We shall select No. 16 wire for the jack. A piece of tubing large enough to receive the flattened end of the No. 16 wire is soldered end-wise to the lateral bar of one side. The end of the tubing before it is soldered in position is concaved so that it more or less straddles the wire bar. The method of soldering this on is the same as in the other case. The solder is first melted on the end of the tube, and then the end of the tube is placed against the bar and soldered, the opposite end being held in the fingers in the direction across the mouth which the jack-screw is going to take when in position. This being soldered, now

saw off the tube about one-eighth of an inch from the bar, and with a pair of flat-nosed pliers flatten it that it may receive the flattened end of the wire from the jack. (Fig. 16.) This flattening is done to prevent the jack wire from turning when the nut is being turned up. On the opposite lateral bar solder the end of a wire, No. 16, and cut it off about an eighth of an inch from the bar; this is to receive the tube of the jack-screw. The jack-screw itself is simply a piece of tubing into which is placed a threaded piece of wire with a nut working against the end of the tube. (Fig. 16.) In most cases of this kind it is very desirable to be prepared to put on an alignment wire around the arch at any time. In preparation for this, tubes should be soldered upon the buccal surfaces of the molar bands pointing midway between the gum line and incisal edge on the labial surfaces of the cuspids. As the bands are pinched upon the buccal surfaces of the molars there will be ridges where the soldering was done, which may be cut concave

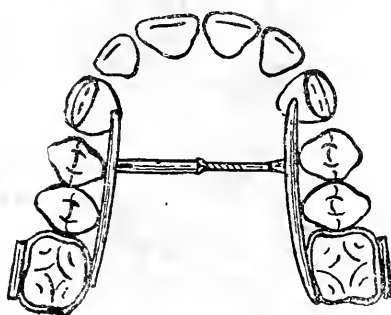


FIG. 16.

with a rat-tailed file so that the tube may rest quite close to the tooth. It is often a good plan to flatten the side of the tube a little to assist in getting it as close as possible to the tooth. The seam of the tubing should be placed against the band so that the solder may close it, and in that way prevent any possibility of its splitting.

In closing, a few words should be said about finishing regulating appliances. They should be so constructed and finished that they will not irritate the mucous membranes of the mouth. No corners or pockets should be left for the collection of particles of food. The surface of the metal should be so smooth that foreign matter will not adhere to it. In most cases it is very desirable to gold plate regulating appliances. This cannot be done satisfactorily unless the surface of the metal is quite smooth. All small corners should be filled and rounded out with solder. Sharp ends of tubes, wire, etc., may be rounded off with a file. A dip in weak acid solution often assists in cleaning a surface. A stone

in the engine may be useful at times, but discs are the most useful in getting around sharp corners and places difficult of access. If the bands are filled with compound they may be polished on the lathe with pumice and whiting, using a cone and brush wheel.

On the blackboard here are drawings of six regulating appliances, one of which I have constructed to-day, which cover a wide range of technic, and also cover designs that are suitable for a great number of cases with but little modification. The class will be divided into six sections, every student in each section making one of these cases and placing it upon his rubber tooth-form and passing it into the office as part of the examination work of this department.

LECTURE NO. 7.—CEMENTING APPLIANCES IN POSITION.

Adjusting and cementing appliances upon the teeth has to be done carefully and well, or a well-designed and constructed appliance will be of little value. It is well to put the different parts upon the teeth singly until the whole is properly adjusted, then remove them and clean and dry, using chloroform or alcohol. The order in which the several pieces are to be put into position, must be thought of before the cement is mixed. Place napkins in the mouth so that moisture will not come in contact with the teeth after they are once dried. Wipe off the teeth with chloroform or alcohol. Use hot air to dry. Moisten the teeth at the places where the bands are to come in contact with them with the phosphoric acid. With a spatula rub these same surfaces with the cement that has been mixed fairly thin. Put cement all around the inner surfaces of the bands and then press them into position, using the fingers as much as possible as a means of applying force. The excess of cement is now trimmed away.

It has been recommended that, after the teeth are dried they be coated with a solution of shellac and after this has set, to set the bands in cement over the shellac. In some instances it is well to clean the teeth with powdered pumice so as to be certain that all grease has been removed. It is often advisable to put an appliance in position and allow it to be worn for a day before it is permanently set. The points of irritation can be noted and the appliance is more likely to be settled to place. No force should be put on the appliance before the cement has thoroughly set. It is usually better to leave the tightening of nuts or the putting on of elastic force until the next sitting.

GENERAL CONSIDERATIONS.

Patients and friends being more or less unacquainted with the scope, possibilities and difficulties of correcting an irregularity of the teeth, it is always wise to have a full understanding before

beginning. The patient and responsible friends should know about how long it will take to complete the operation. This is very often difficult to foretell, but it can be stated within years, if a long operation, or within months, if a short one. They should also know, or have some idea, of the pain and discomfort to be expected. To answer this is also difficult ; as for pain, there should be none ; as for discomfort, there will be more or less, according to nature of the appliance necessary, and what the patient may call discomfort. Some patients will tolerate a great deal more without worry or complaint than others. Young patients are less annoyed by regulating appliances than older ones. Two years ago a little girl, who was being treated in the infirmary, came in one morning with an appliance in her pocket that had been in her mouth. She said that she had to sing at a concert that night and wished to have the appliance put on her teeth again, because she could sing better if it were in place. This appliance was an unusually cumbersome one, but the child had gotten used to it and felt it an inconvenience to be without it. The patient should have some idea how many and how frequent the visits should be. It is your duty to carefully weigh every statement you make, and, above all, to study the patient, his surroundings and his mental calibre. It would be a mistake to begin a long operation for a patient who has not enough stamina or appreciation of the value of the operation to have it completed. The co-operation of the patient is essential to success. The rule is that the younger the patient the more successful the operation. It is your duty to study the general health of the patient, the density or compressibility of the osseous structures, and the character of the mucous membranes. These matters enter very largely into the success or failure of an operation. In cases where the osseous structures are very dense, a good deal more time and force is required to make the same movement of the teeth than would be the case were these structures soft and yielding. Again, if the mucous membranes are highly irritable, appliances may not be tolerated at all. Having made a careful study of these conditions you are ready to study the deformity more closely. To do this a close examination should be made of the arrangement of the teeth and their occlusion. A careful study must also be made of the features, noting if there is any variation from the normal in the position of the chin, lips and end of the nose. The effect upon these features of any changes in the position of the teeth must be thought of. To assist in this study and to have as guides during the progress of the operation, impressions of both upper and lower should be taken. A labial bite is also useful to show the relation of the upper and lower teeth to each other when in occlusion. If the anticipated correction is to have any effect upon the facial condition, photographs or plaster casts should be made of the face. After getting good models of the teeth, and

face, if necessary, a diagnosis of the deformity must be decided upon before any scheme of correction is thought about. The ability to make a correct diagnosis depends very largely upon the study of a great number of cases, and a correct understanding of normal occlusion and the artistic relation of the different portions of the face to each other. The diagnosis made, the next step is to design the simplest appliance that will most efficiently bring about the desired conditions. The ability to do this also depends upon seeing a large number of cases and a full understanding of the applications of force. Later we will bring patients before you and we will study these subjects out together.

Proceedings of Dental Societies

DENTAL SOCIETY OF THE STATE OF NEW YORK.

The thirty-third annual meeting of the New York State Dental Society will be held on Wednesday and Thursday, May 8th and 9th, 1901, in the Assembly Hall at Hotel Ten Eyck, Albany, N. Y. The following essayists will present papers on subjects to be announced: G. V. I. Brown, M.D., D.D.S., Wisconsin; E. S. Talbot, M.D., D.D.S., Chicago, Ill.; W. E. Griswold, M.D., D.D.S., Denver, Col.; W. A. Purrington, LL.D., New York; H. D. Hatch, D.D.S., New York; A. R. Cooke, D.D.S., Syracuse, N.Y.

Members of the profession are cordially invited to be present. Headquarters, Hotel Ten Eyck. Special rates, \$3.50 per day.

JOHN I. HART, *President.*
W. A. WHITE, *Secretary.*

GRANTING DEGREES IN DENTISTRY.

A special convocation of the University of Toronto for conferring degrees in Dentistry, and the annual commencement exercises of the Royal College of Dental Surgeons, will be held in Guild Hall, corner of McGill and Yonge Streets, Toronto, April 25th, at 8 p.m.

Cards of invitation may be had from the Secretary of the Board of Directors, Dr. J. B. Willmott, 96 College Street, Toronto.

NATIONAL DENTAL ASSOCIATION.

The fourth annual meeting of the Southern Branch National Dental Association will convene July 29th, 1901, at Nashville, Tennessee.

C. L. ALEXANDER, *Cor. Secretary.*

O! MI! DENTAL MEETING.

The third triennial meeting of the State Associations of Ohio, Michigan and Indiana, known as the original Tri-State Dental meeting, will be held at the German House, corner of Michigan and New Jersey Streets, Indianapolis, Indiana, June 4th, 5th, and 6th, 1901, beginning at 10 a.m., Tuesday, June 4th. All practitioners who conduct their practices in a manner to command the respect of their fellow practitioners are invited to attend and participate in the proceedings, whether they are members of a State Association or not. These meetings are the largest and most interesting held in the United States. Fully eight hundred dentists will be present. The programme includes some sixty clinics of great interest and importance. Railroad rates of a fare and a third for the round trip have been granted by the Central Traffic Association throughout the whole territory. For further information see the May journals or address

GEO. E. HUNT, *Chairman.*

131 E. Ohio Street, Indianapolis, Ind.

DENTAL SOCIETY OF WESTERN CANADA.

The second annual meeting of the Dental Society of Western Canada, will be held in Winnipeg, July 29th and 30th, 1901. This society is one of the youngest dental societies in Canada. Its meeting last year would have done credit to a much older organization. In point of interest and numbers in attendance, the July meeting will set a high standard for future meetings to surpass.

ROYAL COLLEGE OF DENTAL SURGEONS.

The annual examinations of the Royal College of Dental Surgeons of Ontario, will begin April 15th. The reports from the examiners will be in the hands of the secretary at the first session of the Board, which will be held April 22nd. The commencement exercises will be held in the Guild Hall, at 8 p.m., on the evening of April 25th.

OKLAHOMA BOARD OF DENTAL EXAMINERS.

The Oklahoma Board of Dental Examiners will meet at Oklahoma city, May 7th, at 10 a.m. for the purpose of examining applicants for licenses.

Undergraduates will be prepared to do practical work.

E. E. KIRKPATRICK, *Secretary.*

ILLINOIS STATE DENTAL SOCIETY.

The thirty-seventh annual meeting will be held in Rockford, May 14th to 17th inclusive. All members should make an effort to be present. The society is always glad to welcome reputable dentists, who are not members, from this and other States.

KENTUCKY STATE DENTAL ASSOCIATION.

The annual meeting of the Kentucky State Dental Association will be held in Louisville, on the 14th, 15th and 16th of May, 1901. The usual hotel and railroad rates will be procured. Address the secretary, F. I. GARDNER, 656 Third Ave., Louisville, Ky.

Correspondence

SKILL VS. CASH.

To the Editor of DOMINION DENTAL JOURNAL.

The man who "blows" about the amount of money he is making out of dentistry has a poor conception of a professional career. He is extremely mercenary, and, instead of advancing, remains a stumbling-block in the way of those who are striving to improve the profession.

I was told recently of a young dentist who so far forgot his professional dignity as to make himself ridiculous over the matter of money. He was at a social gathering one evening, and while seated at the table opposite a lady cousin of another young dentist, leaned across to make the remark that he had met her cousin John. "My cousin John?" said the young lady, somewhat surprised. "Why, I have no cousin John." "Why, yes you have," said this persistent young mercenary. "I mean the dentist." "Oh," said the young lady, "You mean my cousin Jack. We always call him Jack, you know. I didn't understand you at first." "Well," said the young cad, with an air of presumption, "he tells me that he is making two thousand dollars a year. Why, I am making four thousand, ha! ha! ha!" Now anyone with scarcely a professional instinct at all, can easily perceive what a consummate ass this young snob made of himself. Such a man deserves very little consideration from his professional confrères, and if he receives the cold shoulder he has only himself to blame.

True merit needs no egotistical advertising, and the sooner the mercenaries of our profession stop their ridiculous bragging about money matters, and settle down to careful and enthusiastic investigation and experimenting for the benefit of the profession, so soon, will they become leaders, from whom we may all receive inspiration.

Who of those in attendance at the recent convention could listen to Dr. Ames, Dr. Price or Dr. Brophy without getting an inspiration? Very few, I take it; and it is of these inspired men we expect so much in the future. We have certainly been shown a higher standard, and we have received a stimulus which, so far as knowledge goes, will serve to keep us abreast of the times. But for practical experience, alas! there is so much to learn, that we look upon our clever demonstrators with awe and reverence, hoping the while that we may some day reach their standard of practical ability. But why should there not be as clever dental specialists here in Canada as there are in the United States? We have the material out of which such specialists are made, and all it needs is application, study, investigation, development. We are taught a great deal about Oral Surgery; but what dentist is there in Canada proficient enough to perform the operations we have seen demonstrated? If all operations requiring the use of the scalpel are handed over to the medical men, why then are we taught to perform these operations at all? Are we fulfilling the requirements of our profession when we let the M.D. perform the work which ought to be ours? Oral surgery comes under the head of dentistry, and yet I do not know of a single dentist attempting operations in the mouth which require the use of the scalpel in the hand of a skilful operator. It may take years of hard study and practice before we can shine as specialists in this branch of our work; but the field is open, and we have the advantage of beginning where the older men leave off. What possibilities are in store for us, and what noble efforts may be expended! When looking into the future there are many who should thank God that they are young men.

While listening to Dr. Brophy's lecture on the "Surgical Treatment of Cleft Palate," and watching his clever clinic at the Sick Children's Hospital, we remembered that he was a dentist, and we felt prouder of our profession because such men were in it, and such skill was possible; and it occurred to me that it was time some of our own men were branching out in this direction. About me were young men of undeveloped ability; and, remembering that Dr. Brophy was once young himself, I saw the possibility of many of these very men becoming so proficient in special lines of practice that their works would become guiding stars, and their names would forever shine out from the niches of fame. I believe it is possible for most men to accomplish that which is dearest to the heart, providing their persevering energy is strong enough to overcome obstacles and drudgery and selfishness. What man has done man can do, and the survival of the fittest is the result of all efforts. Then let us set to work with a will. Let us place the glory of our profession first, and make our pecuniary gains a purely secondary matter. If we have skill as operators, we need not

trouble ourselves about remuneration. That is sure to come. The names of Garretson, Black, Kirk, Flagg, Brophy will be more truly honored for scientific accomplishments than the names of Vanderbilt, Armour, Rockefeller, Rothschilds, Morgan or Cresus for the money they have gathered together. These professional men, with their skill, administered unto suffering humanity in the capacity of true benefactors, and while none of them perhaps have ever been considered great financiers, their fame will nevertheless live when that of the money-getter is long buried in the dust. Let us not make haste to get rich; but let us strive earnestly to acquire skill and proficiency. At the convention we were shown things which teach us that we can no longer loiter by the wayside. To fall back into the old ways is to deteriorate; to stand still is to rust. We must advance or sink into oblivion. Therefore, taking the word "Excelsior" for our motto, and profiting by the inspirations received, let us strive with greater zeal to overcome the difficulties ahead of us. To become master of one single branch of our profession is worth a lifetime of study, and to become famous as a scientific benefactor is a far more worthy object than the accumulation of riches.

MALCOLM W. SPARROW, L.D.S.

Reviews

Treatment of Malocclusion of the Teeth and Fracture of the Maxillæ—Angle's System. By EDWARD H. ANGLE, M.D., D.D.S. Sixth edition.

This work of the well-known author and authority on the above subject is now before the dental profession in its enlarged and revised form. There is a chapter devoted to the following subjects, viz.: Part I. Orthodontia, occlusion, facial art, etiology of malocclusion, classification and diagnosis of malocclusion, alveolous and peridental membrane, models (their construction and study), regulating appliances, the author's appliances, soldering, anchorage, combination of appliances, retention, tissue changes incident to tooth movement, operative surgery, physiological changes subsequent to tooth movement, age appropriate for treatment, treatment of cases, technic and general suggestions. Part II. Fracture of the maxillæ and other treatment. Due consideration is given to each subject, and the work speaks volumes for the skill and ability of the author in orthodontia; and every dental practitioner who undertakes the regulating of teeth will find valuable information in the book, and should add a copy to his dental library. It is printed on good paper with clear type, and the illustrations are very good.

St. Catharines, Ont.

C. E. KLOTZ.

Dominion Dental Journal

EDITOR:

A. E. WEBSTER, M.D., D.D.S., L.D.S. - - - - TORONTO, CAN.

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VOL. XIII.

TORONTO, APRIL, 1901.

No. 4.

MEDICAL EDUCATION FOR DENTISTS.

There seems to be a growing demand for dentists to have the benefits of a full medical education. In the United States a great number of the most prominent members of the dental profession have taken a scientific or medical course. In great Britain a similar condition exists. At the International Congress in Paris a great row had to be set up in order to defeat a resolution recommending that all intending dental students must have the medical degree before being admitted to the study of dentistry.

In the light of experience in both America and Europe it would have been a mistake to make such a recommendation. Not that a medical education is of no benefit to a dentist, but because of the time in a student's career when such a course was demanded. A student who has had his attention directed to the general subject of medicine for four or five years is not very likely to give that attention to exact technical, manipulative detail which is so essential to a dentist. Nor is it ordinarily possible for a man to

acquire the digital manipulative skill necessary to the dentist after he has reached the age of twenty-five, which would have to be the case if a medical education were taken first. A medical education, to be of the most benefit to the dentist, should be taken concurrently with the final years in dentistry, or as a post-graduate course. While a student is studying the principles and technic of operative dentistry, and prosthetic dentistry and dental therapeutics, and aiming to do infirmary work, he should not be asked or expected to interest himself in breech presentations or the theories of physiology. All his thought and energy should be in the direction of the practical work in which he is engaged.

There is an arrangement in almost every dental school in the United States whereby a student may complete a full dental and medical course in five years, or a graduate in dentistry may enter the second year in a medical school, thus giving him credit for one year in time, and for the work done in anatomy, physiology, chemistry, bacteriology and materia medica. In Great Britain, from where our physicians and surgeons are proud to hold a degree, a student may obtain a license to practise medicine, surgery and dentistry in five years. When a graduate in dentistry in Great Britain wishes to study medicine he is given credit for the work he has done in his dental course.

What is the condition in Ontario? A student of dentistry can get no credit for the work done in the dental school if he wishes to take a further course in medicine. A graduate in dentistry is not allowed any time for previous work done, nor are credits from the dental department accepted. It simply means that a student who wishes to graduate in both medicine and dentistry in Ontario must spend seven years and a half of the best part of his life. This is hardly as it ought to be, when the University of Edinburgh, for example, will graduate a candidate in both medicine and dentistry in five years.

The Royal College of Dental Surgeons of Ontario has an affiliation with the University of Toronto which is peculiar if an arrangement cannot be arrived at by which students in dentistry cannot get credit in the medical department for the work done in anatomy, chemistry and physiology. These subjects are taught in the dental school by professors of both Toronto and Trinity Universities, and, surely they will not admit that the teaching they do in the dental school is of no value in the medical department. It may be said there is no demand for any such arrangement. The answer to that is, there are four graduates in dentistry at the present time in Toronto submitting to a four years' course in order to have a medical education. Any one who has taken such a course knows that a graduate in dentistry is quite capable of passing the examination if given a measure of advanced standing. It is the loss of time that is the hardship.

At the last meeting of the Board of the Royal College of Dental Surgeons an arrangement was made with the authorities of the Victoria Hospital by which dental students were admitted to the clinics of the hospital. This was a move in the right direction. The board, no doubt, could make arrangements with the medical department of the University that would allow dental students to obtain both medical and dental degrees in less time than seven and a half years. Such an arrangement would bring the medical and dental departments closer together, and would, no doubt, increase the attendance at the medical department. At least five or six men in each year in the dental department would take a whole or partial course in medicine.

TREATMENT OF ERYSIPELAS.

In 1889 I worked out a method of treating erysipelas by which method the positive germicidal action of sulphate of soda in connection with oxygen, was conclusively established.

I found the sulphate had so great an affinity for oxygen that when applied to a part affected by erysipelas the germs that produce the disease were deprived of sufficient oxygen to maintain life, and in a few hours were dead and resolution had commenced.

My experiments in this line were wholly clinical, and I derived so much satisfaction from them that I have depended altogether upon this method in the external treatment of this disease.

The treatment consists in thoroughly cleansing the part affected, particular attention being given to the removal of all greasy substances. Mix with cold, distilled water, a sufficient quantity of sodium sulphate to make it the consistency of a thick poultice. Cover the diseased part with a single layer of gauze or coarse cheesecloth and over this spread a thick layer of the soda, being sure that it extends considerably beyond the margin of the disease. To keep the poultice in place, cover the whole of it with a layer of the material used to cover the diseased surface (cheesecloth or gauze) and secure it in such a way that it cannot be displaced. Ice water must now be applied to the poultice for the double purpose of producing coldness and moisture, the object being to reduce the inflammatory action, and to prevent incubation.

When the disease is on the face, I insert tubes in the nose or mouth to allow free breathing, and am very careful to pack around the tubes.

I have found that from six to eight hours of this treatment is sufficient to destroy all the germs present. Should however, there be any manifestation of their return, or that they have not been thoroughly eradicated, repeat the treatment.

It has occurred to me that possibly this treatment might be effective in other skin diseases. If so, it has a great advantage over ichthylol and the iron preparations, as it does not produce the disagreeable discoloration that follows their use.

I have repeatedly demonstrated this method to physicians, and whenever I have done so it has received their approval and commendation.

My attention has lately been called to the fact that when some other methods have been used to effect a cure, it has taken weeks and even months to accomplish the result; and that is the reason I wish the profession to have a knowledge of this method which has been so efficient and satisfactory to me.

G. L. C.

ODONTOLOGICAL SOCIETY OF NEW YORK.

From the way in which the last meeting of the Odontological Society of New York city was conducted, one might think political methods superseded professional methods.

The scientist, Dr. S. B. Palmer was invited to present the subject of "Vital Chemistry," and copies of his paper were in the hands of the Executive Committee several days in advance, to insure a careful and scientific discussion.

At the conclusion of this most able paper, the president addressed the meeting by saying in substance, that the society was noted for its chemical achievement and rather than have the speaker feel his views on this subject were to be unquestionably accepted, he had invited two chemists to show the other side of the subject. It was quite evident from the president's approval of derogatory remarks, that he was not in sympathy with Dr. Palmer's paper and that neither age nor science were respected by him.

It was another case of trying to tear down a well-erected monument, instead of endeavoring to build one beside it, that the profession might judge by comparison which would be the more acceptable. These chemists completely showed their inability to discuss the paper, by endeavoring to handle the subject with a laboratory knowledge of analytical chemistry, and by ridicule and insults, undermine this highly scientific and valuable theory which Dr. Palmer had acquired by nearly a lifetime of patient investigation. For instance, one of these chemists had the presumption to say: "I recommend that the essayist read certain authors on the subject of Electro-chemistry which shows the entire subject to be obsolete." These men failed to show that they had even the slightest conception of vital chemistry, as produced in the human being, nor did they impart a solitary bit of knowledge to assist the dentist in

his daily work ; but little else could be expected of boys when urged on by an unscientific leader. It is astonishing that the society would tolerate such treatment to an invited guest, as was shown to Dr. Palmer.

G. L. C.

HEMOPHILIA.

"Elmer W. Roach, of Brooklyn, a student of dentistry, has died after three weeks of almost continuous bleeding from the nose and gums. This case of hemophilia is of special interest because Mr. Roach had reached the age of 22 years, and because about nine years ago he lost a leg in a railroad accident. If he had been a 'bleeder' at that time he could not have survived the injury.—*The Journal*, March 9th, 1901."

Every little while an item of this kind appears in the press. It seems remarkable that men who are giving their special attention to treatment of diseases of the mouth are not called to attend these cases. My experience is that hemorrhage in these cases can be readily checked. I recommend, as one of the most reliable agents, oil erigeron, in from one to four-drop doses, given from every fifteen minutes to once in four hours, according to the emergency of the case. This drug will be found most reliable in uterine hemorrhages, prolonged and too copious menses, menopause, and also in hemorrhoids and pulmonary hemorrhage. A solution of suprarenal capsules sprayed over the mucous surface affords speedy and temporary relief. In hemorrhagic tendency, quinine, administered several days before operation, has a restricting influence.

G. L. C.

Editorial Notes.

THERE seems to be an idea among some people that because a young man has gone out to South Africa as a soldier and safely returned that he has a right to any educational standing he may ask for. Not long since the Royal College of Dental Surgeons of Ontario was asked by the Education Department to accept such qualifications from a young man who applied for matriculation. The College promptly replied that the Education Department's matriculation certificate would be acceptable if they wished to grant it under such circumstances. Needless to say the necessary certificate has not been granted. Contrast the action of this applicant with that of Mr. Bert Munroe, an undergraduate of the

Royal College of Dental Surgeons, who went to South Africa, served in the first contingent for one year, returned, and is now completing his second year at college without asking for any exemptions. The aim of this young man is to become proficient in his profession, having no desire to look for favors. By answering to the call to arms he simply did his duty, and does not wish to be lionized or to be considered an object of charity.

DRS. THORNTON, RUSSEL AND NICHOLS, of Chatham, were visitors at the Ontario Legislature in March to oppose a private Bill which aimed to give one Fisher, of Chatham, admission to the senior year in the Dental College without matriculation or attendance or passing the examinations in the Freshman or Junior years.

DR. F. J. CAPON, of Toronto, is one of the two essayists chosen outside of their own members to present a paper at the Tri-State Dental Society of Michigan, Ohio and Indiana, to be held at Indianapolis, June 4th, 5th and 6th. Eight hundred dentists are expected to be present.

DR. H. W. Bell, of Merrickville, has not been able to attend to his practice for some months owing to illness.

DR. BABCOCK, being an admirer of dogs, was in Toronto a few days during the recent show.

DR. WATSON, of Georgetown, visited the Dental College in Toronto, March 25th.

DR. ALLEN, of Mount Forest, is seriously ill in the General Hospital, Toronto.

Dominion Dental Journal

VOL. XIII.

TORONTO, MAY, 1901.

No. 5.

Original Communications

COMMENCEMENT ADDRESS.

—
BY DR. J. B. WILLMOTT, DEAN.
—

Delivered to the Graduating Class of the Royal College of Dental Surgeons of Ontario, at
Guild Hall, Toronto, April 25th, 1901.

For the few minutes that I occupy the platform this evening my remarks will naturally be directed mainly to the graduating class now before me. It is my privilege, on behalf of the Directors and Faculty of the Royal College of Dental Surgeons, to congratulate you on having successfully completed the course of study and practice required by the curriculum of the college, and on having received from the authorities of the University of Toronto the academic degree of D.D.S., and from the Royal College of Dental Surgeons the certificate, which, by virtue of the statutes in that behalf, confers upon you the legal right to practise the profession of dentistry in the Province of Ontario.

An hour ago you were ranked as undergraduates, now, through the magic word of classic lore whispered in your ear by the learned Vice-Chancellor, and the expert manipulation of the hood in the hands of the bedel, you have been transformed into alumni of an old and honored institution of learning, and are entitled to be addressed as doctor. An hour ago you were but students of dentistry, by the act of the President you have now become enrolled among its practitioners.

The curriculum of modern dentistry is not an easy one, nor one adapted to the lazy or indifferent student. At its commencement, three and one-half years of continuous study seems to many an unnecessary length of time, but to the conscientious student the mastery of the art and science of dentistry, and the collateral sciences, with the manipulative exercises repeated over and over until expert skill is acquired, leaves but little time for general reading or necessary recreation. To such a student,

one who has diligently improved the opportunities afforded him, the hour when he receives from his *alma mater* the coveted diploma, which is the visible evidence of his having satisfied the examiners of his fitness to enter upon his chosen life work, must needs be one of triumph and satisfaction. We would have you appreciate the fact that the profession into whose fellowship you have been admitted is no mean, or narrow, or ignorant, or insignificant calling, but one which by its importance and the wideness of its curriculum is entitled to rank, if not with the "learned," at least with the "liberal" professions. On an occasion, similar to the present, the late Oliver Wendel Holmes said "that the dental profession has established and prolonged the reign of beauty; it has added to the charms of social intercourse and lent perfection to the accents of eloquence; it has taken from old age its most unwelcome feature, and lengthened enjoyable human life far beyond the limit of years when the toothless and purblind patriarch might well exclaim, 'I have no pleasure in them.'" As an organized profession, dating back only to the year 1840, when the first dental college was organized and systematic instruction undertaken, it has in the sixty-one years which have passed made more rapid progress than any contemporary profession. It is now represented on this North American continent by sixty-one colleges, nineteen of which are dental departments of well-known universities; the investment in buildings and equipment approximates closely to \$2,000,000; the teaching staff numbers over 1,000 persons, imparting instruction to 9,300 students, of whom 3,000 will this year be graduated. Among the colleges your own *alma mater*, built and equipped at a cost of \$60,000, is pronounced by disinterested and competent judges to be, in point of accommodation, adaptation and convenience, the excellence and completeness of its equipment, inferior to none; and it is satisfactory to know that it is ranked among the enterprising, progressive and successful educational institutions of this province. It may be regarded as even more satisfactory that it is not in any sense a private institution, but belongs to the dentists of Ontario.

So greatly have the legislative bodies generally been impressed with the importance of modern dentistry in its relation to the public health and comfort, and with the duty of providing by law that only those properly educated and equipped should be permitted to treat the important organs of the oral cavity, that in every province in Canada, in every State of the United States, and in nearly every other civilized country, laws have been enacted fixing the qualifications of those who may legally practise dentistry. With its well-known progressiveness our own Province has taken the lead in dental legislation. Its dental law not only antedates all other effective legislation of this character, but, taken as a whole, provides for the highest standard of qualification.

The British Dental Register for 1900 contains 4,749 names, about one in 7,500 population. A careful computation fixes the number of dentists in North America, in round numbers, at 26,500, of these 1,170 are in Canada, one to 4,700 of a population. In the United States there are 25,330, or one to 2,900 of population. The current thought of the profession is distributed month by month to the dentists of America by twenty-seven dental journals. In this connection it is worthy of note that of the leading journal, the *Cosmos*, the January number, 1901, was addressed to 39,000 English-speaking dentists. To this goodly professional family, with its colleges and its text-books, its literature and its societies, all its own, you are, to-night, cordially welcomed and cheerfully given the opportunity to add your moiety to the sum of professional knowledge, and do your share in the alleviation and prevention of human suffering.

While a considerable portion of your time as students has been occupied with studies common to medicine and dentistry, and while such studies form a very essential part of a curriculum in dentistry, you are not to go out with the idea that you are in any sense physicians practising a specialty of medicine—you are dentists; your whole professional training has had this end in view, and this only. Dentistry has not grown out of, nor has it developed from medicine. In its genesis, and in its history, it cannot be regarded as a "specialty of medicine." As an adjunct of medicine it occupies a very important, though limited, part of the great field of the "healing art," for which medicine has not in the past, and does not now, either through its schools or its individual practitioners, make any provision, nor does it give any promise of doing so in the future. Dentistry, seeking suitable agents wherever it could find them, accepting assistance from every open and available source, has founded, equipped and officered its own colleges. It has prepared its own text-books. It has created its own literature. It has organized its own societies. It has drafted its own code of ethics. It has grown up outside of, but alongside of, the profession of medicine, touching it at many points, overlapping it at several, but developing its own strength and growth to maturity, until now it is recognized by the statute law of Province and State, all over this continent, as a profession separate and distinct from the medical profession. In Great Britain dentistry has been adopted by medicine as a kind of "foster child." It is incorporated with medicine. The administration of its legal enactments is in the hands of the General Medical Council. Its curriculum and instruction are largely controlled by physicians and surgeons. Though instruction in dentistry finds no place in the medical curriculum, its qualifying or licensing bodies are all medical and surgical institutions. It has no individuality of its own. Thus the two modes

of development are brought into sharp contrast. If the merit of the methods is to be judged by results there will, I think, be a pretty general consensus of opinion that the American method is not the inferior.

We have just stated that the field of dentistry is very small, being limited to the treatment of the organs contained in the oral cavity. Do not make the mistake, however, of supposing that this limited field has been fully exploited, and that for the dentist of the present and the future there remains but to elucidate in practice what has already been discovered and fully taught. In this field there are still unsolved problems which are of vital interest, not only to the dentist but to every civilized resident on the surface of the earth—problems of pathology, of therapeutics, of prophylaxis—problems which might well employ the energies and attention of the most gifted and persistent student and observer—problems, the solution of which will doubtless bring to him who solves them both fame and financial remuneration. With all the progress which has been made how much light has been thrown on the causes which lead to the gradual dissolution of sound teeth from their sockets, a condition which, in the opinion of Professor Black, a competent authority, is responsible for the loss of greater numbers of teeth than even dental caries? Of caries, we have, for the present, adopted a theory which seems to account for the observed phenomena; but supposing the theory correct, how much do we know of the conditions which mysteriously influence in hastening, or in hindering the destruction of tooth tissue? Preventive medicine has been for some time a favorite study, but how much do we yet know of methods of prophylaxis which shall prevent the ravages of caries, which our best skill scarcely suffices to retard, much less to control? In the realm of therapeutics the earnest practitioner is still anxiously asking, Where is the ideal filling material for which the profession has been looking for more than one hundred years? and echo still answers "where?" Gentlemen, these and many similar unanswered questions are before you, and mayhap there may arise one of your number who shall bring honor to his *alma mater* and reward to himself by doing something definite towards a solution of some of them.

Of not less importance to the young graduate than the investigation of the unknown things in dentistry is the thorough mastery of that which has been investigated and established. However diligent and industrious you may have been during your undergraduate course, it is impossible that you have succeeded in grasping and assimilating all that has been presented to you. If you would take and hold an honorable position in your profession you must continue to read carefully, not only the text-books, but the current literature of your calling. In this literature is presented the latest and most mature thought of the best and most

progressive practitioners, and only those who keep themselves familiar with these, can keep abreast with the rapid advances being continuously made.

This is an age of co-operation, of conferences, of conventions; if you would keep in touch with the progress of dentistry you must attend its conventions and societies, where, in the presentation of papers and in clinical demonstrations, each can add something for the instruction and edification of the whole. Rest assured that he who isolates himself, and stands aloof from his fellows, under the mistaken idea that he "knows it all" and has nothing to learn from association, will inevitably fall behind in the professional race, and sooner or later practically drop out altogether. Observation would suggest that the young graduate is in no inconsiderable danger of contracting a disease, popularly known as "big head." For such a case experience is the only remedy, and when in process of time he has "unloaded from his head a great deal that never was in it" he will probably develop into a fair practitioner.

You have this evening received the diploma which marks the completion of your novitiate and admission to full fellowship in your profession. This new relationship lays upon you new responsibilities. The honor of your *alma mater* and of the University from which you have received your academic degree is in your keeping. By your conduct will these institutions, in a measure, be judged. See to it that by no act of yours is any reflection or imputation cast upon them. They regard you as their children and look confidently for manifestations of your affection and loyalty.

You are all doubtless looking forward hopefully to the development of a remunerative practice. The ambition is a natural and a laudable one. In your anxiety for its speedy accomplishment study to avoid the use of unworthy means. The special temptation seems to be the disparagement of brother practitioners. Guard assiduously against this evil. Determine that the reputation of the humblest practitioner shall be absolutely safe in your hands. The principal capital of the professional man is his professional reputation; destroy that and he is bankrupted. "Who steals my purse steals trash; but he who filches from me my good name, robs me of that which not enriches him and leaves me poor indeed." Be modest in your assumptions in the presence of older men, and especially those who have not had the advantages of scholastic training with which you have been favored. Remember that experience gives a maturity of information and skill which can never be imparted by schools alone.

Your desire will naturally be to attract the best class of practice. To this end be courteous to all with whom you come in contact. In your person, and in the appointments of your office,

be scrupulously clean. Permit me to say publicly what you have heard me say privately, that other things being equal, he who keeps himself, his clothing, and his rooms free from the odors of tobacco will have greatly the advantage of him who uses the weed. In this connection I trust it is wholly unnecessary to refer to the use of intoxicants—intemperance and success in dentistry are utterly incompatible. As a means to an end general information is important. After many years of observation I venture this assertion, that in no calling, except possibly that of the litterateur, has general culture so large a money value as in the practice of dentistry. In our daily duties we are necessarily thrown into association with persons of refinement and culture, often for hours at a time. Anything in manner or speech which savors of the vulgar, anything which indicates barrenness of idea or information must naturally repel, and if equal skill can be found, with otherwise more congenial surroundings, it will assuredly be sought.

As young men entering upon the active duties of life your first duty, possibly, may be to secure pecuniary success, but that is by no means your whole duty. For him who lived to himself and for himself alone, and has sought only his own aggrandisement, an epitaph which I have somewhere seen will be entirely applicable: "The best that can of him be said is that he's eaten all his bread, drank all his drink and gone to bed." Strive to merit some better remembrance. You owe to the community in which you reside the duty of good citizenship. Take such an active interest in public affairs as is consistent with your duty to your practice. Interest yourselves in church matters, in public and high school affairs, and if leisure permits, in municipal affairs. To me it is a matter of satisfaction to see among the members of Municipal Councils and School Boards, in increasing numbers, the names of dentists. A former student of my own is now serving his fifth year as Mayor of a northern Ontario town. I would that we had at least one representative in the Provincial Legislature.

You owe to yourselves the further duty of the development of character. The late Bishop Phillips Brooks, in a new year's address, three weeks before he died, said, "When I stand by the body of a man who has died the question is not how much money he left but what character has he left? Character is the divinest thing on earth." Not what we have, but what we are, will fix our eternal destiny. "What doth the Lord require of thee but to do justly and to love mercy and to walk humbly with thy God." On this subject I might enlarge, perhaps, with profit, but the limit of this address has been reached. It remains for me, in the name of the Directors and Faculty of the Royal College of Dental Surgeons of Ontario, to cordially welcome you into membership in the College, and to bid you, and each of you, God-speed.

OXYPHOSPHATE CEMENTS.

BY DR. W. V. B. AMES, CHICAGO, ILL.

Delivered before the Toronto Dental Society, February 25th, 1901.

On account of understanding that I was only expected to make clinical demonstrations, I have asked the President to outline his desires, and he has asked me to endeavor to tell you of the reliability of the best cements at present obtainable and describe some of the physical peculiarities of cements in general.

As to the reliability of the better class of oxyphosphates obtainable, as compared to the earliest products, *i.e.*, the oxyphosphates of the text-books, I will only call your attention to the non-porosity of a few products, which give us density, strength for contour, greater integrity under attrition and better sanitary conditions.

As an example of durability, I will take what we might expect of what I will call an old-fashioned porous cement as a filling in an approximal cavity, in a bicuspid or molar, with which approximal contact is desirable, and upon which there is severe attrition during mastication.

I think the general experience has been, till quite recently, that such a filling after a very short time would present a surface badly worn, approximal contact obliterated, allowing the impaction of food into the interdental space, all of which precludes the free use of the teeth of that region.

In contrast to this it is possible with a non-porous cement to fill such a cavity and expect, as an average, at the end of two years to find only a slight layer worn horizontally from the occlusal surface, the approximal contact preserved, the region having been practically as serviceable during the two years as if a contour filling had been made in metal. If a non-porous cement will do so well as a filling, we can expect it to show superiority to the same extent in other uses.

In considering the physical peculiarities of oxyphosphates, they can best be divided into two classes, and the division will depend entirely on the composition of the liquid portion. We have in one class the liquid consisting of phosphoric acid, modified with an alkaline phosphate, such as sodium potassium or lithium; and in the other class we have phosphoric acid, modified with a non-alkaline phosphate, such as magnesium, zinc, aluminum, copper or silver, some of the rare metals being excluded on the score of expense.

The cement-forming phenomena resulting from the addition of zinc oxide to phosphoric acid, more or less modified, is, I believe,

nothing more nor less than the formation of basic phosphate. Under the microscope a mass of such cement is found to consist of zinc oxide granules, agglomerated with a medium more or less dense, depending on the material with which the phosphoric acid has been modified.

On several occasions recently, attention has been called to the fact that there is not found in any work on general chemistry a mention of such a compound as "Oxyphosphate of Zinc," and on this score the claim is made that the term must be erroneous. I am decidedly of the opinion that this omission is simply the result of the compound not having come prominently to the notice of writers on general chemistry, and that when it is mentioned the present term will be used. Oxychloride of zinc is recognized, and is considered a basic chloride of zinc; so I am satisfied that in time the other combination will receive attention as basic phosphate of zinc, and be called "Oxyphosphate."

In the first class of oxyphosphate mentioned, *i.e.*, that in which the phosphoric acid is modified with some alkaline phosphate, the result is necessarily a porous mass, because the basic phosphate which holds together the zinc oxide granules is of itself a porous, friable material. It is not only friable, but is slightly soluble in water, so that between the porosity and solubility, the integrity of the mass is very much greater in the dry than in a moist state. It was first noticed by Dr. Wedelstaedt, that such a cement in a dry state would withstand a fair amount of crushing stress and be lamentably weakened by subjection to an aqueous bath. Such a cement will show no shrinkage at the periphery in a dry state, because there is no tendency to draw towards one centre. There has been shrinkage toward an infinite number of centres, resulting in pores. This lack of change of form in the dry state and the property of having the maximum density when not subjected to moisture, peculiarly fits this class of cement to certain technical purposes, such as the making of models for striking up inlay matrices, and other similar models.

The test for porosity is easily made with red or black ink. The liquid of the oxyphosphate of the text-books consists of a solution of glacial phosphoric acid. This acid, as found in commerce, is usually supposed to be merely metaphosphoric acid (HPO_3), but in reality it is this acid adulterated with a considerable amount of sodium phosphate to make it a more marketable material, as the pure metaphosphoric acid is deliquescent, and cannot be cast into sticks and handled conveniently. Thus, as found in commerce, it is an indefinite material.

Oxyphosphates of the second class, in which orthophosphoric acid has been modified with some alkaline phosphate, will give a mass more or less free of pores, much better in any combination than the sodium phosphate product. Such a mass can show as

much strength in a moist as in a dry state. In a dry state oxyphosphate of this class will shrink towards one centre because the basic phosphate formed is of a semi-glossy, glutinous nature, and cements the zinc oxide granules in such a way that without surplus moisture there will be a shrinkage toward one centre, showing a shrinkage at the periphery and no pores. If such a mass be subjected to moisture during setting, there will be more or less expansion, depending on the formula, because of the taking up of water of crystallization. I have seen a cement the "Synton" shrink 100 points in the dry state in a Wedelstaedt steel tube, such as is used by Dr. Black for amalgam measurements, and expand 200 points under moisture. Such an one I would consider impracticable. The Howard will expand 40 points in a creamy mix. This, I believe, should be a maximum of expansion. Others are observed to range in their expansion from 0 up to the 40 points of the one mentioned.

In oxyphosphates of this class there is very apt to be difficulty from crystallization of the liquid for the reason that the addition of sufficient metallic phosphate to give proper working qualities brings about a condition which will give crystallization from standing. This is especially the case when the liquid has been compounded for slow setting. One way of avoiding this difficulty in cement production is to furnish the material compounded for fairly quick setting, and furnish extra some of the phosphate—"flux"—with which the acid has been treated. With such an outfit the cement can be used, with or without the addition of flux as the case demands slow or quick setting. The addition of this flux will not only retard the setting, but will increase the amount of expansion. A point well worth keeping in mind in connection with oxyphosphates is that the rapidity of setting can be governed in the powder, depending on the degree of fineness to which it is reduced, *i.e.*, the finer the powder, the quicker the setting with a given liquid. On this difference you can often account for a difference in working of packages of some manufacturers, and also create a quicker setting material by grinding of the powder.

There has been much talk of arsenical contamination of cement powders. These powders do probably often contain an infinitesimal proportion of an arsenic compound. I have happened to be in a position to satisfy myself that this trace of arsenic is present as arsenite of zinc, and have proven to my satisfaction that this compound is wholly inert as regards the devitalization of the pulps of the teeth. I have endeavored to destroy pulps in all conditions without observing the slightest potency in the compound for the purpose. This talk of arsenic in cement powder is simply a scarecrow.

ARTICULATION AND OCCLUSION

BY W. M. BRUCE, L.D.S., TORONTO, CAN.

Read before the Toronto Dental Society, February 25th, 1901.

The subject of Prosthodontia, especially that branch pertaining to the articulation and occlusion of artificial teeth, is a part of our work which needs much more attention than it has yet received, as the more study we give to the subject the more we find there is to know, and the more we know the more we will want to know.

When the symmetrical appearance of the different parts of which the human face is composed has been mutilated by the loss of the teeth, when artificial substitutes are to be replaced, our patients demand our best attention to this part of our work in which so high a degree of art and skill may be displayed. Every dentist should, therefore, work in this direction to the limit of his abilities. I am aware that the principle that these two terms may be used synonymously, or rather that the word "occlusion," cover both ideas, is advocated by some in the profession. I am one among many who hope that the dental profession will continue to insist on the distinction between these two terms. They represent separate and clearly-defined ideas, and we know that in our language one word is often used to express a group of ideas of similar character, but never of a dissimilar character. The word "articulation," as I understand it, in relation to the teeth, is the perfect joining or jointing of the superior and inferior teeth when brought into closest and natural relation with one another; when, in the act of closing the mouth and teeth—the lower mandible performing a lateral, forward or backward motion—any number of teeth antagonize or close against one another, they are in "occlusion"; the former passive and the latter active. I am now speaking strictly of articulation as applied to the teeth and not of the temporo-maxillary articulation, which, though bearing an intimate relation, is quite another thing.

It is possible to have a good articulation, in the sense of a direct closure of the teeth, while the occlusion may be defective, or *vice versa*, thus rendering the act of mastication very difficult. In order, therefore, to obtain a perfect "anatomical articulation, necessary to perfect and satisfactory mastication, we must have a correct occlusion as well as a perfect jointing of the superior and inferior dentures in the manufacture of artificial sets. "We must recognize in the varied and wonderful movements of the human jaw an architect whose laws are mathematically correct" and always subserve definite purposes. The movements permitted by the temporo-maxillary articulation are more varied than any other joint in the body, viz., extension, retraction, depression, elevation

and lateral, besides combining all the motions between these thus allowing the gliding and rotatory motion necessary to mastication. A discussion of this phase of the subject would include a study of the glenoid cavity in its various stages of development, and in its relation to the inferior maxilla.

As the members of the profession are all well informed on this part of the subject, I will only point out a few facts having a direct bearing. The opinion, as taught by anatomists, and I think generally accepted, is that "when the jaw performs a lateral movement the condyle and cartilage of one side remain in their normal position while the opposite condyle and cartilage glide forward in the glenoid fossa directing the symphysis of the jaw to the opposite side of the median line. I believe the condyle and cartilage are in their fixed and normal condition only when the upper and lower teeth are in articulation. If we advance the lower jaw slightly forward in the median line until the superior and inferior centrals meet on their cutting edges we will find that in making a lateral movement, say to the right side, while the condyle of the left side glides forward, that of the right side is drawn backward only to resume its position in the glenoid fossa when articulation is complete. We, therefore, conclude that this being a natural law in the greater degree, or when the lower jaw is advanced, say half an inch, it will also exist in the lesser degree, or when the mandible recedes in its movements in order to perform its oscillatory motions, as in the act of mastication, in which the masseter, the temporal, the internal and external pterygoid muscles are engaged, the pterygoids contracting or extending alternately, as the case may be. The movements of the lower mandible will be best represented as if acting on a central pivot, moving forward and backward on the median line between the condyles.

A correct articulation takes second place only to an accurate impression. A natural closure of the jaw is what is required. If we violate natural laws these laws will not be suspended to suit our mistakes or carelessness. It is a deplorable fact that so many painstaking members of the profession in their general practice use methods of articulating in which there can be nothing but uncertainty, the finished work alone revealing the failure when the emery wheel is resorted to in order to make, at the best, a very ill-fitting denture.

In the year 1805 Baptiste Gariot invented the articulator, which was in a crude form, giving the upward and downward movements only, and though there have been many of modified forms since then, so far as I can learn, the Bonwill articulator was the first making any attempt at anatomical movements. The work, as done on the common articulators in use can only give an articulation, but no certain occlusion, lacking the natural movements. You are all familiar, no doubt, with the late Dr. Bonwill's work on this subject, of his curves, straight lines; angles and

triangles in illustration of the fact that "law and order pervade every part, there being no chance work about it." A study of the subject, as found in the American System of Dentistry and in his later writings, will aid us very much in this work. The young practitioner, especially, will not then receive with wonder the remarks so often made by many who are wearing artificial teeth, and say they only can use their teeth with the upward and downward movement, pounding it instead of chewing it as they did with their natural teeth. These teeth were made to be used only one way, the up and down movements, as they were set in the articulator ; any other motion would dislodge them.

Looking at the diagram on page 488 of the "American System of Dentistry," we find that Dr. Bonwill, in Fig. 322, illustrating the teeth in mastication, has drawn a straight line across the masticating surfaces of the molars ; and while he has uttered many solid truths in his work, I cannot agree with him in this, as I believe it to be a curved line equal to the arc of a circle of from thirteen to fourteen inches diameter, on an average, to almost a straight line. Now we will, for example, represent the inferior teeth by a horse-shoe convex toward the outer edge, and inclining inwards while the superior set is the counterpart of the lower only enveloping the lower slightly on the outer edge. According to this arrangement of nature the lower jaw, when carried in any direction, will resume its normal position with the upper with a motion as if one horse-shoe was being placed on the side of the other just adapted to it. If you will now take any straight-edged instrument and lay it across the lower teeth you will observe that the buccal cusps will touch the instrument while the linguals do not. The reverse will be noticed in the upper set, the palatal cusps touching while the buccals do not. Teeth arranged in this way you, will observe, the upper envelop the lower in the buccal cusps while they conform to the lower on the lingual cusps. When the lower jaw is carried to either side in the act of chewing, the lower teeth slide to their places on the upper ones and stop against the cusps on the opposite side. The teeth, if without cusps or very small ones, as in Dr. Bonwill's drawings, would slide, continually to either side, while if arranged on the curved line they would involuntarily come to a common centre, forming a perfect articulation and remain there until carried to either side in chewing or occluding. I have here an arc of a circle of thirteen inches in circumference, also two models of the natural teeth, consisting of full upper and lower sets in their relation to each other. In both of those cases you will see that the idea of the curved line is borne out, while a straight line will only touch the buccal cusps. The set No. 1 in my articulator is taken from my own mouth, and you will see it is a fair example of figures 323 and 324, by Dr. Bonwill, illustrating the curvature at the ramus, showing itself

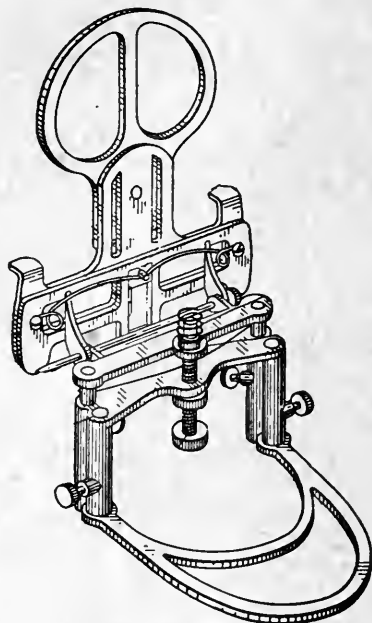
slightly in the bicuspid and commencing at the first molar. In this case the depth of the cusps is in proportion to the overbite, in accordance with diagram No. 319.

In model No. 2 you will see that the overbite, as well as the underbite, are very slight, and consequently the cusps are comparatively short. When in occlusion this set barely touches on the cutting edges of the incisors and cuspids, and when brought to articulation the inferior incisors and cuspids retire a little behind the superior ones, remaining free from touch, thus bringing the bearing on the bicuspid and molars in the act of mastication. An examination of case No. 1, as you find in my anatomical articulator will show you that when you advance the lower jaw until the cutting edges of the centrals meet in the median line, the inferior and superior posterior molars touch at the same instant. Now release the pressure and allow the lower teeth to return with a backward or lateral motion, as in mastication, and you will observe that these same teeth will keep in touch with one another until all the molars and bicuspid are brought into articulation. Thus we recognize nature's law, clearly exemplified in maintaining an equilibrium between the inferior and superior teeth during the varied movements of the mandible in mastication and articulation. These two models taken from nature, though by no means perfect, I consider fair samples of articulation and occlusion as found in the average mouth, ranging as they do from a considerable overbite and underbite, in the one case, to little, if any, in the other. Artificial dentures constructed after this plan, with certain modifications as may be indicated for esthetic effect, etc., will vastly improve our workmanship, besides giving satisfaction and comfort to our patients.

Now, I will repeat that the common articulator does not articulate in the true sense of the word, only opening and closing without any other movement, to represent the natural oscillations, etc., of the lower jaw, and therefore can only be used with great uncertainty even by the very best and skilful workmen.

With a view to a much needed improvement in this very important work, I have constructed an anatomical articulator in accordance with my views, as set forth in this paper, and which I believe will exactly reproduce the various movements of the lower mandible, thereby enabling the workman in the laboratory to assemble a set of teeth with certainty in accordance with any design he may have in view. The instrument is made of brass, and so constructed as to give all the corresponding movements in the mechanism of the human jaws. It consists essentially of a body or frame provided with the necessary holders for the upper and lower plates, on which are placed the teeth to be articulated, the holders being so arranged that they may be moved to represent the natural motions of the human jaw, the backward and

forward motion and sidewise swing. The movements are made by a wire spring operating on a sliding pivot moving backward and forward in a dovetail guide on the median line. This guide is cut in the under-plate of the two plates employed in making the various movements, and at the ends of which are two pins representing the condyles, while in the upper plate the slot filling the office of the glenoid fossa admits of the movements necessary in mastication, or rather anatomical articulation. When it is desirable to get any movement the upper holder may be pressed back, which is equivalent to pressing the lower one forward, or sidewise,



THE BRUCE ANATOMICAL ARTICULATOR.

as desired. The pivot will slide in its dovetail guide, while the pins make their circuitous movements in the slots representing the movements of the natural condyle in the glenoid fossa. When the pressure, giving these movements, is released the curved spring returns the parts to their normal position. If it is desired to separate the upper and lower parts it is merely necessary to withdraw the pin combining them in the hinged joint, and by replacing the pin they can be restored to their former position. Extending forward from the plate, combining the holders, is a lug through which is screwed a set-screw, upon the upper end of which is a coil spring, which rests upon an adjustable nut screwed upon the upper end of the set-screw. This spring acts as a buffer when

the upper holder is dropped, preventing the breaking of cusps. It also serves as an automaton to open the jaws while in the workman's hands. They may be closed by a slight pressure. It also admits of a very close, as well as a very wide, range between the upper and lower plates, by adjusting with the set-screws the plates in the holders. Any number of plates may be used on this working body. All movements of this articulator are on a horizontal plane, the upper and lower parts being always at right angles to each other. The combined features of this articulator are not found in any other.

There is plenty of room to view the work from the back, and thus secure a perfect occlusion of the lingual cusps. The upper part can be thrown back and laid on the table, a very important feature for the workman. The Snow face-bow can be attached to this articulator, if desired.

In conclusion, you will notice I have said nothing regarding methods of articulation, of which there are not a few. I wish to say, however, get a good articulation, however you may, but get it. Never use block teeth except your patient insists on it, or when in your judgment you can do better, which will be very seldom. Always use plain teeth when possible: with them you can get a perfect articulation and occlusion, which you cannot do with block teeth and have good joints. Let your first object be adaptability, then looks, and, if possible, always both.

BLEACHING OF TEETH.

BY W. S. MCKAY.

Read before the Royal Dental Society.

Cause.—Teeth are discolored, in all probability, in 99 per cent. of all the cases from the disintegration of pulp tissue, blood, serum, and disorganized pus and effete micro-organisms, mucus, food, etc. The other 1 per cent. of cases is probably due to broken broaches, to different kinds of alloys and amalgams, and occasionally to the injudicious use of oils that will stain, or use of gums that will infiltrate and stain.

Object.—When we talk about bleaching a tooth, we speak of destroying the coloring matter which has discolored that tooth so that it no longer resembles its vital fellows. To do this we must render the coloring matter soluble, so that it can be washed out and then that tooth is bleached.

Agent.—Now for a bleaching agent. All authorities agree that there is nothing to equal oxygen. If coloring matter be completely

oxidized, it no longer exists; so we must look for some convenient way of applying oxygen, our bleaching agent.

We will suppose that all the preliminary work be done, such as putting on the rubber dam, treatment of abscess, filling of root canal, etc., etc.

Application of Agent.—One of the simple, easy, and at the same time most reliable methods of bleaching which we have is the following: Take a little clean potassa alum and whittle it down and put it dry into the tooth. Get it well up into the pulp chamber and then take a fresh Labarraque's solution of chlorinated soda, which has been made only two or three hours. Introduce this into the tooth with a piece of wood. (Just prior to using this, the chamber and cavity should be washed with a fresh borax solution in water, 2 or 3 per cent. is of sufficient strength.) Effervescence takes place, chlorine is liberated, and penetrates and passes out through the tooth and its odor is readily distinguishable. Oxygen is liberated in a nascent condition. In from two to four minutes the tooth is bleached, providing that all the preliminary precautions have been observed, such as getting all the grease and dirt out of cavity. Sometimes it may require a couple of applications. Another simple and very effective way of bleaching a tooth is to seal very carefully into the cavity or pulp chamber a pledget of cotton saturated with pyrozone, 25 per cent. Let patient go for forty-eight hours and the chances are that the tooth will be thoroughly bleached at the end of that time; if not, repeat.

Retaining Color Obtained.—Now, when the tooth is bleached it must be immediately filled with a suitable material in order to remain so. What shall we use? Take oxychloride of zinc of suitable shade, having it a trifle lighter than the adjacent living tooth when it is dry. Fill the whole interior of the tooth. Allow it to thoroughly harden, then go to work and cut that out and put in some gold filling, or whatever form of metallic filling we are going to use. It is very necessary, in order to retain the color, that the oxychloride should be covered by a metal filling and at the same sitting.

Proceedings of Dental Societies

TORONTO DENTAL SOCIETY.

The first annual clinic of the Toronto Dental Society was held in the Dental College building on Monday and Tuesday, February, 25th and 26th.

Dr. W. V. B. Ames, of Chicago, read a paper on "Some Phases of the Cement Question; the Use of a Flux to Control the Setting of Oxyphosphates, and the Coloring of Cement for Filling Teeth." (See page 167.) The discussion was opened by Drs. Harold Clark and G. S. Martin, followed by Drs. Trotter and Pearson.

DISCUSSION.

Dr. Harold Clark referred to the long time Dr. Ames' name had been associated with the matter of cements. The point that particularly interested Dr. Clark most of all in Dr. Ames' remarks was that he (the latter) had drawn his deductions from laboratory experiments; and these deductions were all the more important because of such experiments, and because they were not merely observations upon the action of the filling materials in the mouth. He referred to the time when, three years ago, Dr. Black came to the Society and gave us what he had learned about these matters in the laboratory; and from that Dr. Clark would consider these deductions more reliable. Since Dr. Black's visit, Dr. Clark considered that there was no doubt about it that the work done by dentists here had improved very much. Now, Dr. Ames seems to be doing his work along those lines. He experiments in the laboratory and draws his conclusions therefrom. He was also glad that Dr. Ames had dispelled that bugaboo about arsenic in cements. Dr. Clark asked Dr. Ames in reference to the expansion of chloride of zinc—if he had found any shrinkage in it or expansion, both dry and wet, and also regarding its power to maintain asepsis, etc.

Dr. G. S. Martin, Toronto Junction, stated that it had given him a great deal of pleasure to have the opportunity of listening to Dr. Ames. Like the rest of the audience he had always associated his name of late years with the question of cements. He was very glad to know that the amalgam question was cleared up both by Dr. Black and Dr. Ames. He had had a great pleasure in reading Dr. Ames's paper, which was delivered at the New York Association a year ago, which met at Niagara Falls; and ever since he had been closely watching the journals for anything written along these lines. He stated there were one or two things upon which

he would like an expression further from Dr. Ames. He would like to have his opinion of the advisability of placing a mass of cement in a cavity and then immediately covering it up, as we frequently do. What effect would that have upon the filling? That is if we immediately place a metal over a mass of cement.

Dr. Trotter spoke of the excess of phosphoric acid sometimes used in mixing these cements, and wanted to know from Dr. Ames if there was anything in the statement that this produced irritation of the pulp, which afterwards resulted in its death.

Dr. Pearson asked as to the advisability of adding coloring material to the cement after having come from the manufacturer, and whether that condition makes a better or a worse cement; and whether you can accomplish with the cement put upon the market better results with that than we have at present.

Dr. Ames, in replying to questions.—In the addition of coloring matter to cements, it depends on what sort of pigment is used, whether there is benefit or damage. As a general proposition, any *metallic oxid* that will answer the purpose will not be detrimental and may be beneficial. Vegetables or organic pigments should not be used. Oxychloride of zinc I did not mention, as I was billed for oxyphosphates. This cement does not change form and shows little porosity. Twenty years and more ago, when this cement was much used, I believe that we were not getting the best from the material, because the preparations used were adulterated or modified to give quick setting, and I believe thereby rendered less valuable. A straight oxychloride is rather slow setting, so much so that it must always be covered with some other filling and given hours for hardening. I have a strong suspicion that many of the shortcomings of the material depend on this modifying for quicker setting.

SESSION OF CLINICS.

February 26th, 1901.

Supervisor: Dr. John E. Wilkinson. On account of considerable of the forenoon's programme being carried over to the afternoon the clinics were not commenced until 3.30 p.m., Tuesday, February 26th. Making due allowance for disadvantages attendant on having a large number of demonstrations in progress at the same time, this part of the meeting was successful and profitable, keen interest being sustained until after six o'clock.

CLINIC NO. 1.—"Combination Tin and Gold Filling." By Dr. Gershom Howard, Toronto.

Dr. Howard's design was to show the adaptability of a combination of tin and gold in proximal cavities of molars and bicuspid. The cavity selected was in a lower molar, very large taking in the mesial, occlusal and distal surfaces, also a fissure on

the buccal. Excellent separation had been obtained. The dam was adjusted and a matrix applied, held in position by a retainer. When the cavity was all ready for filling, Dr. Howard proceeded as follows: No. 6 tin foil was cut into strips about one inch wide and rolled. These were folded backward and forward across the base of the cavity, or cut into lengths slightly longer than the base, and packed with deeply serrated pluggers, then condensed with those having very slight serrations. When the base was nicely covered, rolls of similar strips of tin with two layers of No. 4 semi-cohesive gold of the same size within, were inserted in similar manner and condensed. When about two-thirds the distance to the step was filled, cohesive gold was used with the tin to the edge of the step, from which cohesive gold alone was used to complete the filling. The points of advantage claimed for the use of tin were: (1) Low conduction of thermal changes; (2) therapeutic action of the salts; (3) ease of adaptation, and (4) the more accurate filling at the bevelled margins along the matrix and the marked saving of time.

CLINIC NO. 2.—“Immediate Separation Without Pain by Injecting a 1½ per cent. Solution of Cocaine.” By Dr. S. McL. Milne.

Dr. Milne's primal object is to save the patient's time by avoiding the necessity of additional visits to the office for gradual separation. The painlessness is secondary, but important. The gum is first bathed with cocaine, then the hypodermic is used, having a fine sharp needle, and the cocaine is slowly and carefully forced in. Any ordinary separator is first used to obtain space, then an appliance, consisting of a threaded wire with a tapering head on one end and a tapering nut on the other, is applied. This takes up very little space, is out of the way for operating, and keeps back the dam and tissues.

CLINIC NO. 3.—“Articulation and Occlusion of Teeth.” By Dr. W. M. Bruce.

For his demonstration Dr. Bruce had artificial dentures set up in wax on plaster models so articulated as to illustrate the natural and normal closure and movements in the mouth, and the applications in artificial substitutes. The articulators used were novel, ingenious and practical, attracting a great deal of interest which was justly merited. One point claimed by the clinician was that in a lateral movement of the lower jaw, allowing the lower cuspid to strike the tip of the upper cuspid, a compensating point of contact should, at the same time, be had on the opposite side by the second molars; the teeth can be so arranged. This will prevent the tilting so much complained of by those wearing artificial dentures. An articulator for this purpose must reproduce the natural anatomical movements of the jaws.

CLINIC NO. 4.—“Hygienic Saddle-Bridge.” By Dr. J. Frank Adams.

The bridge exhibited by Dr. Adams had for abutments the lower left first bicuspid and second molar. The dummies were of gold and were hollow. They were so formed as to reproduce the teeth on the lingual surfaces as well as on the buccal, having concave bases which would lightly rest upon or touch the alveolar ridge. Another point of interest in Dr. Adams' sample was the fairly wide and clear interspaces, which, it was claimed, would allow healthy growth of gum tissue in festoons.

CLINIC NO. 5.—"Condit System." Dr. Wallace McLaren.

This system is one by which crown-work and plate-work are used in conjunction. Gold crowns with attached tubes or slots are so inserted upon natural teeth or roots as to give attachment to partial artificial dentures having corresponding pins or dove-tails. Dr. McLaren exhibited samples of work on models. He does not favor the application of the system to the extent some do, but claims for it very great benefits in smaller cases.

CLINIC NO. 6.—"Platinum and Gold Combination Filling." By Dr. T. McGill.

Dr. McGill performed his clinic upon a tooth in the mouth of a patient. The cavity was a large mesial one of the upper left central. The teeth were of a darker shade than the average. Platinum and gold are prepared in combined proportions in foil, which was the form used by the clinician. The working properties are somewhat similar to those of pure gold. There is greater stiffness, which requires heavier pressure and malleting. When finished, the filling was several shades darker than one of gold. Dr. McGill claimed advantages in appearance in certain shades of teeth and hardness of surface.

CLINIC NO. 7.—"Porcelain Contour in Incisor, using Platinum Wire Retention." By Dr. J. F. Ross.

Dr. Ross constructed and inserted with success and taste a large porcelain contour in the mesial portion of an upper right central. The Hammond sectional electric furnace was used. Advantages of electric over gas furnaces are: (1) No need of an assistant for pumping bellows; (2) it can be placed in the operating room beside the chair, and can be heated while the platinum is being burnished into the cavity; (3) noiselessness. In the preparation heavy sharp margins were obtained with positively no bevelling. A pit about one-eighth of an inch deep was prepared in the seat, parallel to the pulp canal. The cavity was deepened toward the incisal edge, but had no undercut. For matrix, platinum, gauge sixty, well annealed in a furnace, was burnished in using a large ball burnisher at first then, smaller ones to obtain accurate adaptation. This, when removed, was trimmed all around to within 1-32nd of an inch from the margins. A platinum wire-post was fitted loosely into the pit and projecting half way down the cavity. The platinum was placed back in the

cavity, also the post, puncturing it in the proper place to enter the pit. Some body was next placed in the matrix and around the post while in the cavity, the surplus moisture being removed with blotting paper. The matrix, post and all were cautiously teased out, placed in the furnace for the first baking. For this Close's body was used for a strong foundation. For succeeding bakings a different high-fusing body was used, to obtain the proper shade. A clean stone was used for removing any surplus body, but no surplus was allowed to develop at the margins. During baking the doctor replaced the matrix and porcelain in the cavity and burnished the edges some five or six times to allow for shrinking and drawing away.

CLINIC NO. 8.—“Gold Filling.” By Dr. T. Gallagher.

This was a straight, out-and-out all-gold filling. The cavity was large, in the grinding surface of a lower left molar. Dr. Gallagher prepared and successfully inserted and polished a creditable gold-filling in a comparatively short time.

CLINIC NO. 9.—“Gold Filling in Cervical Cavity.” By Dr. W. Cecil Trotter, B.A.

Owing to the failure of the attendance of the patient, Dr. Trotter was not able to perform this operation. He gave, however, an interesting demonstration on the examination of the teeth, pointing out particularly the advisability of filling the slightest cavities and open fissures for patients who cannot be relied upon for having regular systematic examinations of their teeth.

CLINIC NO. 10.—“Treatment of Pyorrhea Alveolaris.” By Dr. Chas. E. Pearson.

Dr. Pearson's patient presented a mouth with a very marked condition of this vexatious disease. All deposits were thoroughly removed from the necks of the teeth, then a 10 per cent. solution of trichloroacetic acid was applied. The doctor considers patience a requisite quality on the part of the operator. Regular attendance is necessary. The emphatic feature is the complete removal of all deposits. For this purpose Tompkin's instruments, in a set of eleven pieces, have been found most useful.

CLINIC NO. 11.—“Treatment of Abscesses and Bleaching with Peroxide of Sodium.” By Dr. Wm. Wunder.

Dr. Wunder prefers peroxide of sodium to peroxide of hydrogen for these reasons: It forms a soap. In combining it liberates more oxygen. It is more penetrating, and the results can be better observed.

CLINIC NO. 12.—“1. Open-face Crown. 2. Bell-shaped Crown, to be Applied without Trimming the Tooth.” By A. J. McDonagh.

1. Open-face Crown.—A tube of gold is prepared, fitted and adapted in the mouth. While on the tooth it (the tube) is filled with plaster for an impression. For the next step the doctor has

an appliance contrived by himself, consisting of a cup of hard vulcanite with a soft rubber base, in which is a hole. The tube is now placed through this hole, allowing just that amount within the cup which extended above the margin of the gum about the tooth. Mellotte's metal is poured into the cup, filling the impression and imbedding the edge of the tube within the cup. The cast with the tube is removed and all plaster washed out. Look into the tube from the side farthest from the cutting edge of the cast representing the tooth. Squeeze the tube together till the slit is in line with the cutting edge; place the tube and cast in a vice, ends against the jaws, and tighten the vice sufficiently to hold; with parallel pliers pinch the tube against the cast until it fits perfectly as a *fac-simile*, which can be done in three minutes. Remove, melt out the Mellotte's metal, and with a small amount of solder unite the crevice where the cutting edge had been. With a fine saw cut out the face from the crown, which is an exact *fac-simile* of the tooth. Trim off gold, polish, and the crown is finished. All can be done in half an hour.

2. Bell-shaped Crown, to be Applied Without Trimming the Tooth.—Following is a concise description of this original and clever device of Dr. McDonagh's. In the molar to be crowned measure the distance from the highest cusp to the largest part of the swell of the crown, then from the point to the neck, then the circumference at the largest part of the swell. Prepare a crown, having the lower section of pure gold fitting only at the swell, the upper section of 22k gold accurately adapted to the tooth. Place in position on the tooth. On the lingual side pinch the gold, making it fit accurately at the neck, which is comparatively simple on account of this part being of pure gold. With curved shears cut away the part pinched up. Remove the crown. Unite the crack made by cutting off pinched part by placing over it and soldering to it a fairly wide and thick strip of platinum—two pieces of square post-metal soldered together will answer the purpose. File this to a dovetail. Make a female part of the dovetail with overlapping flanges of pure gold tightly adapted to the lingual surface of the crown. Saw a slit up the platinum dovetail, and the crown is ready for insertion. This method was described by Dr. McDonagh, after which another method, contrived for the purpose of avoiding the fulness produced by the dovetail, was demonstrated and described, which was wonderfully ingenious. This was clearly understood by the spectators, but the supervisor would be pleased to be excused from undertaking a description.

CLINIC NO. 13.—“Electrical Appliances.” By Dr. Frank D. Price.

Dr. Price exhibited an elaborate electric cabinet containing the following appliances and apparatus: (1) A mouth lamp for general

use; (2) a lamp for high illumination of the mouth; (3) a combination lamp and prop to hold the lamp in any position while inserting a filling; (4) an attachment for the engine hand-piece for throwing light and a stream of warm air into the cavity while excavating; (5) an air heater for compressed air; (6) an air heater with bulb; (7) a root-canal drier; (8) wax and gutta-percha spatula; (9) a gold annealer; (10) a cautery knife; (11) a melting furnace; (12) a cataphoric appliance. All these were attached to the 110-volt circuit. There was also a cataphoric appliance supplied by batteries, with different kinds of resistance to show their relative efficiencies. The cabinet at first appeared to be a maze of electrical puzzles, but Dr. Price clearly and intelligently led one through a group of practically useful contrivances.

CLINIC NO. 14.—“Hypnotic Suggestion.” By Dr. W. Earl Willmott.

This was a very interesting and popular demonstration. Dr. Willmott very successfully hypnotized a young man and then applied a great many interesting and amusing tests, most of which he explained. The doctor showed, by using sterilized instruments and piercing the hand, how hypnosis could be applied in dentistry, but while possible of practical application in cases it was not recommended. Occasional hypnotizing was said to be of no harm, but the continued and repeated operation of the influence upon the same subject was discountenanced.

CLINIC NO 15.—“Seamless Gold Crown.” By Dr. C. E. Lennox.

Dr. Lennox was prevented from performing his clinic. He believes strongly in seamless crowns, and considers them to possess advantages of greater strength, better adaptation and a saving of time in the manufacture.

CLINIC NO 16. “Pulp Digestion with Papaine.” By Dr. Geo. Gow.

Dr. Gow described this process and illustrated methods of application, influences and results by specimens of teeth. Papaine or papoid can be obtained from a druggist. It will not act on living pulps, but on devitalized pulps, used with hydrochloric or sulphuric acid it will accomplish the disintegration in from one to two weeks by being sealed up in the cavity.

CLINIC NO. 17.—“Restoring with Gold Bands and Amalgam the Crowns of Badly Decayed Roots.” By Dr. W. J. Woods.

The purposes of this method, described by Dr. Woods, were: (1) Saving and restoring badly broken down roots; (2) discouraging extraction as far as possible; (3) a method which accomplished the work of a gold crown, but allowed a lower fee, thus extending the privilege to poorer patients. The doctor had a series of four carefully prepared casts. The first showed a mouth with an upper bicuspid having only the roots remaining, and

these decayed beyond the bifurcation. The second showed the same roots, prepared and having cemented into the canals a wire staple. In the third, the crown was built up with amalgam with parallel surfaces. In the fourth, a gold band, contoured, was cemented in place and filled in with amalgam. In all respects but one it resembled a gold cap, the difference being in an amalgam grinding surface instead of gold.

CLINIC NO. 18.—“Refitting of Ill-fitting Dentures in the Mouth by Lining with Oxyphosphate of Copper Cement.” By Dr. W. V. B. Ames, Chicago.

The doctor gave a clinical description of his method of adapting, by the above method, an ill-fitting denture to the form of the mouth. It can be accomplished in a few minutes as follows: The plate is cleaned thoroughly and the surface somewhat roughened, digging it up with a sharp point to improve the adhesion of the cement. The cement is mixed about as thick as vaseline and placed all over the surface of the plate to be refitted. The mucus membrane is wiped free of all excess of moisture and the plate inserted. Occlusion properly insured and held until cement sets, when the operation is over except for trimming away all excess. Patient is cautioned not to allow the plate to become dry if for any reason they are laid out of the mouth.

ROYAL DENTAL SOCIETY.

The regular monthly meeting of the Royal Dental Society was held in the College Building, on Thursday, February 21st, at 8 o'clock, the President, Dr. K. C. Campbell, in the chair. There was a good attendance of the students, and lively discussions after each paper.

The first number on the programme was a piano solo by Mr. Mat Garvin. Mr. Husband gave a violin solo and responded to an encore.

Mr. Mooney read a paper on “Blind Abscesses.” He gave cause, symptoms and clinical history. The first thing towards treatment was to remove irritant and procure drainage, etc.

The discussion was opened by Mr. P. Field, who was not quite clear on the classification of abscesses. He asked for information, and in the discussion which followed, several members gave their ideas on the subject.

Mr. Scott gave a solo composed by Mr. Hayden, of junior class, to the tune of “I should like to die, said Willie.” It treated on the making of bridges and wondered if we would have to make bridges on dummy models in heaven.

“Bleaching of Teeth” was the subject of a paper read by Mr. W. S. McKay. He described very thoroughly the method advo-

cated by Dr. Harlan of Chicago. The discussion was opened by Mr. Hoggan, who said his experience was somewhat limited in that branch of the dental art. Several members of the Junior class took part in the discussion. Among others, Jones, Garvin, Fraser and Conklin. Dr. Guy Hume, who was present, being called upon said he had had some success in the use of 25 per cent. pyrozone. Mr. Wylie (jun.) had great success with acetic acid and bleaching powder.

A song by Mr. Scott brought the programme to a close. After singing "God save the King," the meeting closed to meet again in March.

C. W. McBRIDE, *Secretary*.

GRADUATES IN DENTISTRY, 1901.

The commencement exercises of the Royal College of Dental Surgeons of Ontario and special convocation of the University of Toronto, was held in Guild Hall, Toronto, April 25th. The following graduates had the degree of Doctor of Dental Surgery conferred upon them, and received the title of Licentiate Dental Surgery: W. J. Bentley, K. C. Campbell, J. S. Chambers, A. R. Davison, R. P. Feild, M. J. Frizell, S. J. Gibson, H. Hartman, W. P. Harvey, J. A. C. Hoggan, A. Jemison, C. W. McBride, R. T. McDonald, J. R. McGregor, D. F. McIntosh, G. A. McKay, W. S. McKay, A. McKercher, W. H. McLaren, E. A. Mooney, W. J. Norris, J. M. Palmer, E. W. Paul, J. H. Purdy, J. A. Robertson, S. J. Sims, W. E. Wilson.

Vice-Chancellor Moss, of the University, and President G. E. Hanna, of the Royal College of Dental Surgeons, presided. On the platform were members of the University Faculty and the Faculty of Dental College and the Board of Directors of the Royal College of Dental Surgery. After the degrees were conferred the Vice-Chancellor gave an address on "The Relation of the Dental Department to the University, and the Relation of the University to the General Education of the Province." Dr. Hanna presented the licensing diplomas to the graduates, and Dr. J. B. Willmott delivered an address to the students, which appears in this issue.

ANNUAL MEETING NORTH-WEST TERRITORIES DENTAL ASSOCIATION.

The annual meeting of the North-West Territories Dental Association was held in Moose Jaw on April 3rd. The Treasurer submitted his annual statement, showing a good substantial sum in the treasury. During the year, according to the secretary's

report, there had been several prosecutions under the dental law and in every case the association had won. In one instance the prosecuted party had fled the country.

The date for holding the students' examinations was fixed for May 7th, at Regina. During the year there had been some fourteen dentists enrolled in the Territories, with six more pending. This will make the proportion of dentists to population about three times as great as in Ontario. The election of officers resulted in Dr. Cowan, of Regina, being re-elected President; Dr. Keown, of Moosomin, Vice-President; Dr. Size, of Moosejaw, Secretary-Treasurer, and Dr. Hobb Brook, of Calgary, Registrar. The annual meeting of the Western Canada Dental Society, which is to be held in Winnipeg in July, was taken up and discussed. It was resolved to make every effort to get as many of the territorial men to attend as possible.

BOARD OF DIRECTORS OF ROYAL COLLEGE OF DENTAL SURGEONS.

The regular annual meeting of the Board of Directors of the Royal College of Dental Surgeons of Ontario was held in the College building, Toronto, April 22nd to 26th. This being the first meeting of the Board since the election last December, the officers for the ensuing two years were elected: President, G. E. Hanna, Kempville; Treasurer, H. R. Abbott, London; Registrar, C. E. Klotz, St. Catharines; Secretary, J. B. Willmott, 96 College Street, Toronto.

VERMONT STATE DENTAL SOCIETY.

Resolutions on the death of Dr. W. George Beers, of Montreal, Canada:

Whereas, It has been the will of our Heavenly Father, to remove our esteemed and beloved brother and associate, Dr. W. George Beers, of Montreal, from this earthly abode, the Vermont State Dental Society has lost one of its most esteemed, beloved and genial honorary members, one who was always active and constant, whose presence among us in the past has always been an inspiration, but if prevented from being with us in person at our meetings, always led us to feel that he was present in spirit; the profession at large has met with an irreparable loss, as he was ever ready to contribute largely to the advancement of his profession, and as Editor of the DOMINION DENTAL JOURNAL he has greatly elevated and successfully advanced our profession. We deem it highly proper at this time to give expression to our great appreciation

and friendship, and our sadness and bereavement makes us sincere in extending sympathy to the relatives and friends; yet while bowing to the inevitable, we cannot refrain from giving expression to our sorrow and remorse that he should be removed from us.

Resolved, That a copy of these resolutions be sent to the afflicted family, and also preserved upon the memorial page of this Society.

E. O. BLANCHARD,
G. F. CHENEY,
G. O. MITCHELL,

Committee.

SOCIETY OF DENTAL SCIENCE OF ST. LOUIS.

At a special meeting of the Society of Dental Science of St. Louis, held Monday evening, April 29th, 1901, the following resolutions in memory of Dr. H. J. McKellops were unanimously adopted:

Whereas, in the death of Dr. H. J. McKellops the dental profession has sustained a great loss, which will be felt throughout the length and breadth of two continents; and

Whereas, the members of the profession in St. Louis and especially of this Society, who best knew the depth of his friendship and felt the inspiration of his example, will mourn his loss most deeply; therefore, be it

Resolved, That the Society of Dental Science of St. Louis hereby expresses its full appreciation of the valuable services rendered our profession by Dr. H. J. McKellops during his long and active life; and

Resolved, That in recognition of his distinguished services and the great honor in which he held his profession, a suitable biographical memorial be prepared and framed, with his photograph, and hung in the rooms of this Society; and

Resolved, That a copy of these resolutions be sent to the family and to the dental journals and spread upon the Minutes of this Society.

EMMA EAMES CHASE,
HERMANN PRINZ,
B. L. LISCHER,
A. H. FULLER,

Committee.

Selections.

**DENTAL SURGERY WITH THE FIELD FORCE
IN SOUTH AFRICA.**

BY F. NEWLAND PEDLEY, F.R.C.S. (ENG.), L.D.S.
Recently Dental Surgeon to the Imperial Yeomanry Hospital at Deelfontein.

Communicated to the *Lancet*.

The following record of my experiences, which was written whilst I was on service in South Africa is intended to indicate the defects of our military system as regards the care of our soldiers' teeth. For reasons that will be easily understood I deferred the publication till a more suitable time than that of my actual service.

Early in February, 1900, I left England with the staff of the Imperial Yeomanry Hospital as a consulting dental surgeon to treat the special cases of injuries and diseases of the jaw, and for nearly six months I worked under varied conditions—on board ship, in a tent, afterwards in a shanty, and subsequently in a hut. Here I settled down into a daily routine which little resembled what I expected to do, but which seemed to meet the requirements of a large camp as far as the work of one dental surgeon can be said to supply the needs of a general hospital.

Occupation for me was never lacking from the first day of the outward voyage, for there was the usual epidemic of influenza followed by numerous cases of neuralgia and toothache. I had to attend patients nearly every day, although I had only a few instruments available. I managed to do some temporary fillings and some extractions, including a badly impacted wisdom tooth. The patient was an officer who was suffering from trismus, and as he was just recovering from an attack of bronchitis ether was unsuitable as an anesthetic, so, much against our inclination, we had to give him chloroform in his bed, and in dislodging the impacted tooth I had to rely exclusively on sense of touch.

After two days at Cape Town we were ordered to Deelfontein, which is nearly five hundred miles north of the Cape. I had a world of trouble in taking my two or three tons of equipment with me, and when I arrived at the camp we were all under canvas and it was premature to unpack instruments of value. We had quite enough to do to keep ourselves dry and to prepare accommodation for expected patients. Even whilst we were living in tents there was something for me to do in seeing urgent cases of dental trouble, especially amongst the sick. Under such circumstances one cannot do much beyond extractions, and I had to

seat the patient in a deck chair and support his head against the tent pole by way of securing a fixed point. At this period the newspapers announced that there was a dental surgeon in our camp, and applications soon poured in from all sides for dental treatment, but I could do little for the applicants, as I was unwilling to unpack good instruments before I had a water-tight roof. By way of a temporary resting-place I was promoted to a shanty ten feet square, with a tarpaulin roof. This dear little place, which subsequently became a mortuary, I used for a time as a dental surgery, and also as the office of a camp journal, which I started under the title of the "Devil's Fountain."

On March 25th a complicated fractured jaw case arrived, and as it was necessary for me to unpack my workroom appliances in order to construct a special splint, I was moved into a hospital shed, which I converted into a workroom and bedroom combined, and I had the use of the second or reserve operating theatre of the hospital for my consultations and operative work. The workroom was 27 feet long and 16 feet wide, and it was constructed of sections fastened together with bolts and nuts, so that it could be readily taken down and put up elsewhere if desired. Each section was 8 feet long, 5 feet 6 inches wide, and 4 inches thick, and it consisted of an outer layer of galvanized iron nailed on to a rough wooden frame and lined with deal boards. It was lit by four windows, each 3 feet 6 inches by 2 feet 6 inches. These huts, or sheds, were much cooler than tents in summer and were a much better protection against rain. For winter they were rather too well ventilated, as there was an open space of four inches all round the eaves, and there were about fifty large square holes in the woodwork where the sections were bolted together. A fine breeze blew upwards between the floor boards, and there was a wide chink round the floor, which admitted a further supply of fresh air. The cost of a similar shed better made and finished would be about £50 in England, but these sheds were made in Cape Town and were inferior in every respect to the English huts, excepting in the matter of mobility. The draught under the boards could be reduced by piling earth round three sides of the foundation, and the industrious person who had the foresight to bring his own carpenter's tools could quickly exclude the frosty night air. With these slight improvements the shed made a very suitable workroom, and here I set up a casting bench, a plaster bench, and a jeweller's bench, with vulcanizer, lathe, and all necessary appliances. A smaller room would be sufficient for a workroom if additional space were afforded for storage and for a bedroom, but in a country where commandeering is recognized as a fine art and tools are in great request, the dental surgeon who elects to combine his sitting-room, bedroom and store-room with his workroom is wise. I covered the ugly walls with numerous

prints and engravings, many of which I framed. This kind of workroom may be considered perfectly satisfactory for two or three mechanical assistants, in addition to which there is space for one bed 2 feet 6 inches wide.

My operating and consulting room adjoined the operating theatre and X-ray room, and could be used at any moment as a second surgical theatre if it were necessary to perform two operations at the same time. The room was 19 feet by 16 feet, and was lit by seven windows. An attempt at top lighting had been made, but it could not be said that the light was really good for dental manipulations. In this room I placed an operating chair, a dental engine, and all the instruments, appliances, and materials that I required for practice. There were, in reserve, a second engine and two more operating chairs for the use of possible assistants. I worked strictly by appointment for all cases requiring fillings, and the ophthalmic surgeon was kind enough to give gas every day at 11.30 a.m. punctually. Some surprise may be felt that one should give gas to a soldier for the extraction of a tooth—and it would not be necessary if the patients were not sick, but hundreds of them were recovering from typhoid fever and dysentery, which left them in a very weak state. A man with nine bullet wounds, who was known among his friends as the man who stopped a whole volley, was a very brave fellow, but he was glad to take gas for a severe extraction. A patient was sent to me with a history of thoracic aneurysm and I decided to use gas in the extraction of an aching tooth, believing that the pain of the operation would be more dangerous than the anesthetic. An appointment for the next day was made with Mr. L. V. Cargill and the surgeon in charge of the case, but the aneurysm ruptured into the esophagus during the night and the patient died.

The work required of me at Deelfontein was little more than the work of a dental practitioner, and I only had a very few severe gunshot cases, which I treated in conjunction with Mr. Alfred Fripp. Gold fillings are rarely necessary in a military camp, but the percentage of exposed pulps is very high, as nearly every patient would rank as a neglected case. Disease, neglect, tough beef and hard biscuit play havoc with the teeth—one young man had only three useful teeth left. How such patients recover from typhoid fever and dysentery is a mystery. They are of no further use as fighting men under the present *régime*, for they cannot eat service food. Nothing is done to preserve the soldier's teeth whilst he has any, and when they are gone he must go home as a man unfit for service. It would be better and quicker to put a soldier's teeth in order than to train a fresh man as a substitute for the invalid. The officers suffer with their teeth after a few months campaigning, and I hear on the best authority that there were at one time at Modder river eighty officers requiring dental attention

and they sent to Cape Town for a dental surgeon. Unfortunately, they were again on the march when he arrived.

The selection of cases for hospital treatment and the limitation of work was most perplexing, and without the exercise of a good deal of discretion the dental surgeon in such a situation will find himself attending the patients who have the least claim on his time. I thought that some patients who were able to go to Kimberley or Cape Town might be recommended to consult practitioners in those towns, for there were in the beds of the Imperial Yeomanry Hospital a great many more patients than I could attend.

TO SAVE THE TEETH OF AN ARMY.

One is compelled to face the question: Can nothing be done to save the teeth of an army? And regarding my appointment as being somewhat of an experimental nature I think I should be fulfilling the wishes of those interested in the welfare of our brave "Tommyes" if I were to attempt to devise a scheme under which the army in time of war could be provided with dental practitioners. I purposely allude to war times, for if it can be shown how to deal satisfactorily with the teeth of an army threading its way over one thousand miles of South African territory it will be comparatively easy to attend to the soldier's teeth at home. At first sight it might seem desirable to attach a dental surgeon to each regiment, brigade or division. Experience in South Africa, however, has left no doubt in my own mind that it would be better to make such appointments to the general hospitals, and perhaps to the stationary hospitals also, where the transport rations and sleeping accommodation for two or three such dental officers could easily be added to that already required for the staff of twenty-one medical officers. Each of the numerous general or base hospitals in South Africa should have been provided, before it left England, with a dental unit consisting of one dental surgeon and two senior dental students as assistants. In Deelfontein it would have been impossible for me adequately to tackle the dental work of our 1000-bedded hospital without at least two assistants. What must the condition have been in the general hospitals at Cape Town, Kimberley, Naaupoort and Bloomfontein? My chief experience was drawn from our camp of 1,000 souls, but in the latter place alone there were 5,000 sick in hospital, to say nothing of the 30,000 troops left encamped there after Lord Roberts moved north with the bulk of his army. At each general hospital there should be an operating-room with three chairs, and a workroom for the construction of special appliances and dentures. Each stationary hospital of 200 beds should similarly have a dental surgeon upon its staff, but workroom appliances are cumbersome and heavy as compared with surgical instruments, and all patients

requiring dentures should be sent to the general hospitals. The dental units should be supervised by the chief dental officer at the base in the same way that the principal medical officer supervises all medical units.

To meet emergencies and the requirements at the actual front—as, for example, after a great battle or during a protracted halt of the army—the principal dental officer should have a small reserve of dental officers who could be drafted to any point on the receipt of the necessary intelligence from headquarters. The equipment of the dental officers who were sent to the front would, of course, be as light as possible. The dental engine packs into a small space and all the necessary instruments and materials would go into a case one cubic foot in measurement. Dental officers at the front could obtain additional supplies if necessary from the nearest general hospital. No special operating chair should be taken to the front, all that is necessary is a portable head-rest that can be fixed on to any chair. In large hospitals portable operating chairs, weighing eighty pounds each and costing seven guineas, would be useful, and a strong operating chair for anesthetic operations would be desirable in addition.

The manner in which the dental officers are to found and some indication of the expense may now be given. I believe that dental surgeons to act as heads of units could be obtained in any war on similar terms to those which were given to the civilian medical officers in the present war. Every unit would thus contain one good dental surgeon who should preferably be a teacher from one of the dental schools. Two senior dental students, who would act as dental assistants to him, could easily be obtained at very small expense, and it would be better if the dental surgeon were allowed to select his own assistants. When I was leaving England I obtained a list of the names of my pupils who would follow me to act as assistants or dressers, and at least a dozen gave in their names. The conditions arranged were that each of them would serve for at least six months, receiving a first-class passage and maintenance in any hospital to which they might be attached, together with remuneration at the rate of £75 per annum as pocket money. Each student was to bring his own dental engine and student's set of instruments, the value of which would be about £30. I communicated with the Royal College of Surgeons of England, and they undertook to recognize six months' service in South Africa as the equivalent of a like period spent in a hospital at home. At the Imperial Yeomanry Hospital we had a suitably equipped workroom and operating-room, so that if it had been desired to test the work of a dental unit in a general hospital it would only have been necessary for the War Office to sanction the sending out of two of the pupils whom I selected. I applied for these assistants and I had more than enough work for them.

The committee in London who manage the affairs of this hospital acquiesced in my request for them to be sent, of course at the expense of this hospital and not at that of the War Office ; but the latter absolutely refused to endorse the appointment of more than one dental attendant to the British army of about 200,000 officers and men. My chief wonder is that Mr. Fripp succeeded in getting them to allow even that one to be included in the staff of the Imperial Yeomanry Hospital.—*British Journal of Dental Science.*

CONCLUSIONS OF THE ANESTHETICS COMMITTEE OF THE BRITISH MEDICAL ASSOCIATION.

Relative Safety of the Various Anesthetics.—1. The relative safety of the various anesthetics may be gathered from the statistical tables in the report. When only those cases of danger which were held to be due entirely to the anesthetic are considered, the following instructive figures are obtained, further emphasizing the danger of chloroform as contrasted with ether: Cases of danger (including deaths) considered to be due entirely to the anesthetic, under chloroform, 78, giving a danger rate of 0.582 per cent.; under the A.C.E. mixture, 1, giving a danger rate of 0.147 per cent.; under mixtures of chloroform and ether, 2, giving a danger rate of 0.478 per cent.; under the A.C.E. mixture followed by chloroform, 1, giving a danger rate of 1.694 per cent.; under chloroform preceded by ether, 5, giving a danger rate of 2.2 per cent.; under chloroform followed by mixtures of alcohol, chloroform and ether, 1, giving a danger rate of 0.36 per cent.; under ether, 2, giving a danger rate of 0.065 per cent.; under "gas and ether," 3, giving a danger rate of 0.096 per cent.; under ether preceded by chloroform, 1, giving a danger rate of 0.480 per cent.; under ether preceded by the A.C.E. mixture, 0; under the chloroform group of anesthetics (addition of the first six headings above), 88, giving a danger rate of 0.524 per cent. and under the ether group of anesthetics (addition of the last four headings above), 6, giving a danger rate of 0.085 per cent. 2. Although (excluding nitrous oxide) ether may be accepted as the safest routine agent, certain circumstances determined by the state of the patient, the nature of the operation, etc., may render the use of some other anesthetic or combination of anesthetics both safer and easier.

The Best Methods of Administration.—3. No method of administration of chloroform is free from danger, but an examination of the complicated cases appear to show that the occurrence of

danger depends largely upon the administrator who employs any particular method. 4. No conclusion from the evidence before the committee as to the best method of administration of ether and "gas and ether" is possible. 5. The data warrant the conclusion that the A.C.E. mixture should not be given from a closed inhaler, *e.g.*, Clover's. 6. This conclusion applies to all mixtures containing chloroform.

Best Methods of Restoration.—7. The sub-committee are unable from the material at their disposal to draw any conclusion upon this point.

Clinical Evidence Regarding Anesthetics Generally.—8. Anesthetics are more commonly associated with complications and dangers in males than in females. 9. Excluding infancy, and taking anesthetics collectively, the complications and dangers of anesthesia increase *pari passu* with advancing age. 10. Anesthetics are notably more dangerous in proportion as the gravity of the patient's state increases. 11. Danger to life is especially likely to be incurred at early periods of the administration of anesthetics, while the tendency to less grave complications increases directly with the duration of anesthesia. 12. The tendency for complications, dangerous and otherwise, to occur increases *pari passu* with the gravity of the operation.

Clinical Evidence Regarding Chloroform.—13. Chloroform is about twice as dangerous in males as in females. 14. Chloroform is most dangerous during early infancy and after thirty years of age; least so from ten to thirty years of age. 15. In conditions of good health chloroform is very much more dangerous than other anesthetics. In grave conditions chloroform still remains the least safe anesthetic, but the disparity between it and other anesthetics is far less marked than in health. 16. When danger occurs under chloroform, whatever its exact nature may be, there is abundant evidence that in a large proportion of cases the symptoms that are observed are those of primary circulatory failure. 17. Imperfect anesthesia is the cause of a large number of cases of danger under chloroform. 18. Vomiting during anesthesia, which may lead to danger, seems to be more frequent under chloroform than under other anesthetics. 19. Struggling is very much more frequent in the complicated cases under chloroform than in the uncomplicated, and this phenomenon must therefore be regarded as a source of grave danger under chloroform. 20. The tendency for circulatory complications to appear increases directly with the relative amount of chloroform in the anesthetic employed. 21. While vomiting is more common after administrations of ether, severe and prolonged vomiting is more common when chloroform has been used. 22. Circulatory depression following anesthetics is more common after chloroform than after ether. 23. While the respiratory complications of anesthesia as a whole are of equal

frequency under the ether and chloroform groups respectively, yet those that occur under ether are mostly of a trifling and transitory nature, while those that occur under chloroform are more grave and persistent.

Clinical Evidence Regarding Ether.—24. Under ether the complications of anesthesia are more frequent with males than with females, but with the former they are generally slight, ether being rather more dangerous with females than with males. 25. Ether, where employed throughout or preceded by nitrous oxide gas or by the A.C.E. mixture, is singularly free from danger in healthy patients. 26. Minor troubles in administration due to laryngeal irritation and increased secretion are more common under ether and "gas and ether" than under chloroform and its mixtures. 27. Struggling occurs more frequently with ether when given alone than with other anesthetics, but it rarely leads to danger. 28. After-vomiting is more common with ether than with other anesthetics, but it is usually transient. 29. Bronchitis is much more common as an after-effect of ether than of chloroform. 30. With "gas and ether," as with ether, dangers are more common in females, although complications are more frequent in males.

Clinical Evidence Regarding Mixtures and Successions of Anesthetics.—31. The A.C.E. mixture in most of the statistical tables holds an intermediate position between chloroform and ether. 32. The A.C.E. mixture is more dangerous in males than in females, but not to such a marked degree as is chloroform. 33. The administration of ether antecedent to chloroform does not abolish the possibility of chloroform dangers. 34. The various mixtures and successions of anesthetics were recorded too infrequently to justify definite conclusions.

General Conclusion.—35. From the evidence before the sub-committee they are convinced that by far the most important factor in the safe administration of anesthetics is the experience which has been acquired by the administrator. In many cases the anesthetization completely transcends the operation in gravity and importance, and to insure success, particularly in these cases, it is absolutely essential that an anesthetist of large experience should conduct the administration.—*Lancet*.

COCAINE INJECTIONS AS A MEANS OF SECURING LOCAL ANESTHESIA.

BY DR. A. BLEICHSTEINER, GRATZ.

For the painless extraction of teeth the essayist had been using since 1886 injections of cocaine hydrochloride, etc. The unfavorable criticisms that have been published lately on the subject of cocaine have induced him to discuss its use once more, inasmuch as he can only express a very favorable opinion upon the effects of this drug. He had previously discussed this question before the International Dental Congress of Paris in 1880, and that of Chicago in 1893.

The author bases his observations on fifty thousand injections that he has made. He uses generally the contents of a syringe of a solution at five, three, or two per cent. He discussed briefly the following points :

1. The preparation used.
2. The solution.
3. The syringe (his own device).
4. The method of injection.
5. His observations on poisoning and other unfortunate cases.

He had always used the solution prepared by E. Merck, Darmstadt. Since 1894 he had used only a two per cent. solution ; not because he had had cases of poisoning with a three per cent. solution, but because as good results are obtained therewith. The cocaine hydrochloride is dissolved in distilled water, to which one part of mercury bichloride for every 10,000 parts is added. Two decigrams of cocaine hydrochloride are mixed with ten grams of this solution, and this preparation is kept in suitable bottles. These solutions keep very well for weeks, and the results are very satisfactory.

The syringe used is composed of a glass cylinder mounted on vulcanized rubber, and has never changed. The canula has the shape of an S, made in such a way that the prolongation of the axis of the glass cylinder and the end of the canula make an angle of twenty to thirty-five degrees. The bar of the piston is graduated, and every space represents a drop or a decigram. The needles are only 20 mm. in length. The cutting part of the needle is at the utmost 2 mm. in length. The syringe also has two bars which serve as a fulcrum to the fingers. After every injection the syringe and the needle are placed in a bottle of absolute alcohol and hermetically sealed. In this way one may be absolutely sure that the syringe is completely sterile.

The method of injection is as follows : The gum-tissue covering the tooth to be extracted is thoroughly cleaned, and all the salivary secretion present is removed by means of a piece of cotton saturated with absolute alcohol. Immediately after making the injection he begins at the interstitial portion of the labial or buccal gums, at the point nearest the centre of the tooth. The first injection is made horizontally, or, if possible, parallel to the gingival margin. The needle is passed into the tissues as deeply as possible. The second injection is made horizontally toward the distal surface of the neighboring tooth. The third injection is made mesio-lingually ; the fourth disto-lingually. The most important point is to make the four injections as near to the gingival margin and as parallel as possible. After making the four horizontal punctures, four vertical ones are made, and these also serve to show whether sensibility has disappeared. The injection in each puncture consists of a drop only, to avoid the swallowing of a part of the solution ; also the patient is directed to use a solution for rinsing the mouth. There is no danger in swallowing a minute amount of the solution, but so doing anesthetizes the uvula, and the patient has the sensation of having a foreign body in the narrow portion of the pharynx, a thing which causes much annoyance and induces expectoration until the tissue returns to the normal condition through the use of gargles of cold water.

During the injection it must be carefully observed by means of the mirror that the solution does not escape. If this should happen the injection will need to be performed in a different direction. If the gums become blanched the anesthesia is successful ; the contrary is the case if, instead of blanching of the gums, several swollen spots are observed. The injecting liquid should be forced between the periosteum and the bony structure of the alveolus ; in this way the liquid penetrates the medullary spaces of the bone until it reaches the alveolo-dental membrane. It is only under these conditions that perfect anesthesia is secured. The puncture should be parallel to the curve of the alveolar process, so as not to penetrate very deeply into the bone nor too superficially into the epithelial tissue. This is a difficulty that has to be overcome, and the skill necessary to do this is acquired only after long practice.

It is the practice of the essayist to extract the tooth immediately after the last puncture is made, and not to wait for the effects to become more marked—a condition which other practitioners seem to consider necessary. He believes that if the injection has been well made the anesthesia cannot become more pronounced in the space of time elapsing between the injection and the extraction, but, on the contrary, the danger of a wider dispersion of the solution becomes greater. If the extraction is made immediately after, part of the solution injected comes out with the blood which

flows out after the extraction. He is sure that by his plan poisoning, which otherwise does occur, is prevented, observation and practice only tending to confirm his views.

He has not observed the slightest trace of poisoning since adopting the use of two per cent. solutions; dilatations of the pupil, dryness of the throat and of the nasal mucous membrane, vomiting, vertigo, tinnitus aurium, diminution of the pulse-rate, or even complete disappearance of the pulse; cold perspiration on the forehead, hands and sometimes over the whole body; shaking, tetanus, tonic spasm, apathy, soporific condition, unconsciousness, lethargy, loss of strength, collapse—all these symptoms have not been observed since he began using the three per cent. solution, and with greater reason are they absent now that he only uses a two per cent. solution. But in very nervous and anemic persons he has observed paleness of the face and a more or less marked weakness due to the atonic condition of the vessels. These cases also have now disappeared. His precaution with such patients consists in giving them a small glass of brandy before the injection, and then to wait until its effects are produced; if necessary a second glass is given. The results of this plan have always been satisfactory.

Conclusions.—1. There is not another method of producing local anesthesia that can equal the method of injecting cocaine hydrochloride:

2. A two per cent. solution is sufficient; even a one per cent. solution would suffice.

3. The maximum dose of cocaine hydrochloride for one injection is half a grain.

4. The extraction should be made immediately after the injection.

5. A stimulant (brandy or coffee), should be given before the injection to anxious, nervous, or anemic persons.

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VOL. XIII.

TORONTO, MAY, 1901.

No. 5.

DISTRICT DENTAL SOCIETY MEETINGS IN ONTARIO, JULY 2ND TO 5TH.

At the meeting of the Board of Directors of the Royal College of Dental Surgeons of Ontario, April, 1900, it was decided to hold three clinics in Ontario—one in London, one in Toronto, and the other in Ottawa; each under control of the local society in the districts named—the Board to supply the meetings with two expert clinicians, one in orthodontia and the other in crown and bridge-work.

At the April meeting of the Board of 1901, the arrangements were completed. The two clinicians named have international reputations in their departments. Dr. Klotz, of St. Catharines, Ont., who will have charge of the orthodontia, is a man of very wide experience and a close observer of the works and methods of the most recent investigators in this subject, besides being endowed with that ingenious individuality, which is so essential to the ortho-

dontist. Dr. Capon, of Toronto, Ont., will have charge of the crown and bridge-work. Dr. Capon has been for years before the dental profession of Canada as one of the leaders in this department. As Canadians, we take no small pride in knowing that his services are sought after by almost every important dental society of this continent. With two such eminent clinicians, together with the supplementary programme supplied by the local societies there ought to be a banner attendance at each of the meetings. The subject of porcelain will also have due importance on the programme.

The aim of the Board is to make it possible for every dentist in Ontario to have a knowledge of the most recent methods of practice with as little loss of time and money as practicable. With this in view, the dates and places of meeting were fixed for July 2nd and 3rd, in London; 3rd and 4th, in Toronto, and 4th and 5th in Ottawa. Programmes and circulars will be issued to every dentist by the Secretary of the Board early in June. This journal will also give further notice in its next issue. Every dentist is expected to be present.

FOUR YEARS' COURSE IN DENTISTRY IN ONTARIO.

At the regular annual meeting of the Board of Directors of the Royal College of Dental Surgeons of Ontario, April, 1901, the following very important resolution was passed:

Resolved, That from and after the first day of May, A.D. 1902, the course in dentistry, in the Province of Ontario, shall be four years' continuous pupilage under indentures, subsequent to matriculation, and, during that period, attendance at four sessions of the School of Dentistry of the Royal College of Dental Surgeons of Ontario.

YUKON DENTAL LEGISLATION.

For some time past the North-West Territories Dental Association has been trying to get the Yukon Territory Dentists to separate from them, form an association of their own, and get a law for themselves. Up to the present the Yukon, dentally speaking, is still under the jurisdiction of the N.W.T., the Yukon Council not having yet provided otherwise. It has been found simply impossible to manage the Yukon from Regina and, as a consequence, the great bulk of the Klondike dentists are practising illegally.

On April 23rd, however, the President of the Territorial Association, received advice from Dawson City which goes to show that the dentists there are bestirring themselves. Dr. Gillis, of Dawson City, writes for full information, saying they are "endeavoring to get dental legislation for this territory." It is to be hoped they will succeed and place our profession there on a better basis than it has been up to the present.

W. T. C.

Editorial Notes.

DR. MCPHERSON, formerly of Woodstock, is now located at Paris.

DR. O. A. MARSHALL, of Picton, has given up practice, owing to poor health. He is now living with his father, Dr. J. A. Marshall, of Belleville.

THE DOMINION DENTAL JOURNAL will be sent free until the end of the year to all of this year's graduates in Canada, whose names and addresses are sent to the editor.

DR. ALLEN, of Paisley, ex-member of the Board of Directors of the Royal College Dental Surgeons, was in Toronto on private business during the recent meeting of the Board of Directors.

WE wish to thank Dr. C. N. Johnson, of Chicago, for a very neatly gotten up book entitled, "Poems of the Farm and other Poems," by Charles Nelson Johnson. A review will appear later.

AT present there is a Bill before the New Brunswick Legislature to compel the Dental Council to accept graduates of any Dental College which is a member of the Faculties Association of America without any further preliminary educational qualifications. The Council holds, and rightly, too, that the preliminary educational standard of some of the colleges in question is not sufficient.

CROWNS FOR FIRST MOLARS IN CHILD OF TEN.—A correspondent asks for advice that perhaps some of our readers will be pleased to give: "Would you advise crowning first molars at the age of ten? I have a little girl of ten whose molars are decaying very rapidly, such as a soft chalky ring completely around the tooth, as well as defective pits. In no case is the decay deep enough to necessitate devitalization. Both parents have a decided tendency to pyorrhea, which might cause the crowns to be intolerable to her gums."

CLOSE observers of the discussions at dental meetings are struck with the narrowness with which the subjects are approached. It seems to be the aim of some men to discuss the essayist instead of the essay, or, in other words, to combat the man instead of his views. Then again, some men take it as a personal affront if the views they have put forward are attacked. We can never be numbered among broad, liberal-minded professional men until we can discuss a subject without any thought of who is or is not its champion. The Hon. Peter Stirling attributed his political success to the fact that he always discussed principles and never men.

A CORRESPONDENT in London, England, writes that the new Dental Hospital of London is now an accomplished fact. Its equipment is in every way excellent, and all has been done that the most careful supervision, combined with the best of modern ingenuity, can do to render the new building in every sense a credit to the dental profession. Students will now be able to work under conditions of the greatest comfort and luxury. The only fear is that those who have moved in from the old building will be so overcome by the change that they may be incapacitated for work for some time. Much credit is due to the Committee of Management, and to the individual members of the staff who have supervised the arrangement of the different departments, for the thoroughness with which the work has been carried out.

NOTICE.

The date for the Haskell Post-Graduate Course in Montreal has been changed from May 13th to June 10th—two weeks. Fee for the course reduced to \$30.00. For further particulars, address Pattison Dental Mfg. Co., Limited, 14 Phillips Sqr., Montreal, or Dr. G. A. Yant, 17 E. Van Buren St., Chicago, Ill.

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By young enterprising dentist, a half interest in a well established non-advertising city practice. Will pay cash. Am willing to take necessary course to specialize if desired. Address Box 64, DOMINION DENTAL JOURNAL, Toronto.



NOTE.—Fig. 13 should be third part of Fig. 9, and third part of Fig. 9 should be marked Fig. 13.

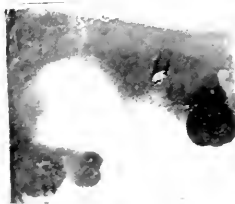


FIG. 17.



FIG. 18.



FIG. 19.



FIG. 20.

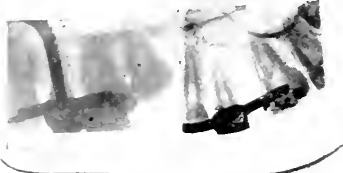


FIG. 21.

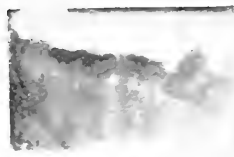


FIG. 22.



FIG. 23.



FIG. 24.



FIG. 25.



FIG. 26.

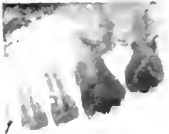


FIG. 27.

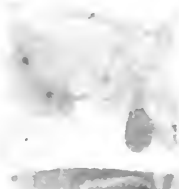


FIG. 28.

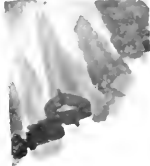


FIG. 29.



FIG. 30.

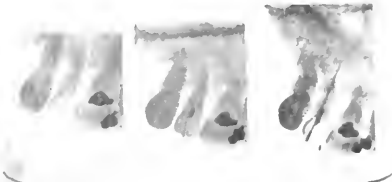


FIG. 31.

Dominion Dental Journal

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TORONTO, JUNE, 1901.

No. 6.

Original Communications

THE ROENTGEN-RAYS IN DENTISTRY.—ILLUSTRATED.

BY WESTON A. PRICE, D.D.S., M.E., CLEVELAND, OHIO.

Read before the Toronto Dental Society, February 25th, 1901.

Mr. President, Ladies and Gentlemen of the Toronto Dental Society,—The great progress in the development of the science of Dental Skiagraphy in the past two years is little less than marvelous, for the pictures we made then as our best would now be considered utter failures. Then we were content to get an outline of the root of a tooth; now we study the pathological conditions of the pericemental membrane and abnormal growths in the pulp chamber. Then we exposed two or three minutes; now one to four seconds. Then we always had uncertainty as to relations; and now we see the conditions, stereoscopically, in true perspective. That this has taken an enormous amount of research and expense I need not tell you, but the results are compensation enough.

It will not be possible in the time available to give you very much but results, in the form of practical cases from practice and such incidental references to the technic as can be conveniently made as the lantern slides are being shown. You will all understand and expect that the projections upon the canvas cannot give the fine detail and definition of the negative or print, because of the great magnification.

To understand the pictures it is necessary to keep in mind that they record simply differences in density or absorbability of the rays; thus the metals of fillings, etc., and gutta-percha and cement, being very opaque to the Roentgen-rays, stop nearly all

of them. The enamel is less opaque and the dentine still less. The bone of the jaw or decaying dentine are less opaque than the dentine, and thus contrast is secured through the large variety of substances in the part to be skiagraphed.

Let us first consider some conditions of normal and abnormal positions of teeth.

In the first lantern slide (Fig. 1) we see the condition of the superior arch of a boy at fourteen years of age. He had retained his deciduous molars very firmly, and as the anterior teeth required regulating, it was important to know if he would ever get his bicuspid. They are shown to be in proper position and in process of formation, though very much delayed.

In the next (Fig. 2) we see a bicuspid causing the absorption of only the mesial root of an inferior deciduous molar, accounting for its great rigidity. This is also a case of delayed dentition, the boy being about fourteen years of age.

In Fig. 3, showing a superior arch, we have one bicuspid only formed and the permanent cuspid in position at eight years of age. This premature development of the cuspid and the absence of the second bicuspid has caused the first bicuspid to develop back against the first permanent molar. The incisors are intruded. This slide shows two views of it, taken three months apart, to see if nature could correct the position of the locked bicuspid; but there is practically no appreciable change. The temporary molar was extracted and an appliance put on to the molar and bicuspid to separate them, to unlock the bicuspid, and this slide (Fig. 4) shows the improvement sixty days later. This is regulating before the teeth are in sight.

Fig. 5 shows a retained deciduous cuspid at seventeen, with, clinically, no suggestion of the presence of the permanent cuspid. The permanent laterals also being absent increased the deformity. The skiagraph shows the position of the permanent cuspid engaged against the central. It was regulated to place by the dentist in charge, and the view to the right shows it in nearly perfect position, secured with platinum wire.

Fig. 6 shows a case of a lady thirty years of age, where the permanent cuspids had never appeared, and, clinically, there was no suggestion of them ever having formed. The deciduous cuspids had been extracted. The deformity was very considerable. The skiagraphs show both cuspids, perfectly formed and just within the process, and can easily be put in position.

Fig. 7 shows the whereabouts of a missing second bicuspid of a girl of twelve. It is erupting at about forty-five degrees to its correct position, and would appear in the vault well within the arch. The true and exact position of this tooth can be seen beautifully in the stereoscopic pictures I have here of it.

Fig. 8 shows a photograph of a cast of a very remarkable

case. A girl at fourteen is lacking her permanent left central and lateral incisors. The permanent right central and left cuspid are erupted properly, but lean toward each other so much that they nearly touch. What the mother remembers as the remains of a deciduous incisor is seen between these and decayed to the gum line.

Fig. 9 shows what the X-rays reveal. The crown of the missing left central is lying at right angles to its proper position and engaged against the apex of the root of the right central, but has no root developed. The decayed root, supposed to be that of a deciduous incisor, proves to be the perfectly developed root of a permanent lateral without a crown. When this young lady was about four or five years of age, she fell on the pavement, crushing her upper jaw, with the results here shown. Of course the method of correction of the deformity is very much more easily determined, since the existing conditions are known.

Before leaving this branch of the subject I wish to show you a sample of some of the studies I am making, by means of the Roentgen-rays, of the development of teeth.

Fig. 10 shows the condition of a baby boy's teeth at fourteen months of age, at which time not any of the deciduous teeth have appeared. Not only are they shown forming, but also the tips are forming of the permanent central incisors, and the view to the right shows the development of the same case at twenty-eight months of age. Though this boy's father has not his permanent laterals, we know at fourteen months of age that he will have them.

Fig. 11 shows the bad havoc that may be wrought by the forcible extraction of a first permanent molar, inferior. In this case, I am told that it was done by force; the child was six years old and struggled desperately. The result at the time was great laceration of the jaw. At fourteen she has never erupted her second bicuspid or second permanent molar. The skiagraph shows them formed, the molar standing upright but nearly an inch back of its proper position, and the second bicuspid lying on its side, pointing back, also on inch back of its proper position.

Fig. 12 shows a remarkable case of delayed dentition at fourteen years, in which the second temporary molars are all retained. The second bicuspid (superior) are forming, but not the inferior, though on the left side (inferior) the formative organ is to be seen, probably just commencing its work. This is also beautifully shown stereoscopically.

Let us now look at some pathological conditions of tissues. An inflammation in the bone or the softer tissues about it, or in it, will cause either a change in the cellular structure of the bone or a diminution in the quantity of lime salts present, and a thickening of the membranes or their destruction. The extent of these conditions is clearly shown in good skiagraphs

Fig. 13 shows a blind abscess at the apex of the first bicuspid (inferior) which had been the obscure cause of a neuralgia for some months and none of the teeth gave abnormal symptoms. Its treatment gave instant and perfect relief. Almost immediately on the death of a pulp, or even before, sometimes there is a break in the continuity of the pericemental membrane at the apex of the root. This break extends and is what we call a small blind abscess, as the case before you (Fig. 13), or it may extend, as you know, to the destruction of an enormous amount of tissue. Fig. 14 shows such a case of long standing. It had been treated for years, very unscientifically, through the root canal with no improvement. The skiagraph shows the extent of the absorption or size of the abscess cavity, and the most dependent point of the abscess, marked "X," between the lateral and cuspid. A liberal perforation for drainage at this point and sterilizing and active stimulation of the walls of the cavity, effected a very speedy and complete cure.

Fig. 15 shows an enormous abscess of the superior maxilla, which was not suspected to be large. It had its fistula beside the second bicuspid. The first bicuspid had been extracted and replanted in search of the cause which was completely obscure. The patient was sent to me for a skiagraph, which shows the enormous extent of the absorption and shows it to come from the lateral incisor, the root of which is badly absorbed. The most dependent point of the abscess is also shown beside the central incisor. With this information the dentist removed the diseased apex of the lateral and secured perfect drainage. This procured a speedy and a perfect cure.

Fig. 16 shows how wonderfully nature has filled in this abscess cavity with new bone in three months.

Fig. 17 shows an inferior maxilla half severed by a dental abscess.

Fig. 18 shows a remarkable case. A fistula externally on the face at corner of moustache ran pus profusely and continually. The teeth present were all normal and alive. There was no evidence clinically of the source of the pus. The skiagraph shows a pericemental abscess with the fistula at the upper forward corner (marked "A") too high to drain this large pus-pocket properly. The point of drainage should be between the molar and the second bicuspid on the point marked "B."

I have referred to the operation of root amputation, and I desire to say that in my practice it has universally been successful in curing chronic abscesses where the irritant is a necrosis or absorption of the root. I only use this treatment as a last resort, though it is quite simple.

Fig. 19 shows a case before and after operation. In the first picture to the left is to be seen an abscess about the roots of the central and lateral which had been treated skilfully but unsuccessfully.

The skiagraph showed absorption of both roots and both were amputated, without extraction, as seen in the middle view. The extent to which nature had filled in this cavity in thirty days is shown in the last view to the right by comparing the size of the original abscess cavity with the former pictures of it.

Fig. 20 shows how perfectly the bone fills in around these amputated root stumps. The apex of this bicuspid was amputated over three years previous to the taking of this skiagraph. The patient claims it to be the most rigid tooth she has, though she was nearly sixty years of age when I performed the operation.

In orthodontia the Roentgen-rays are especially valuable by showing the shapes and positions of roots. In certain movements of the teeth it is necessary to move the roots parallel, as in this case (Fig. 21). They must be carried apart parallel to correct an intruded bite. The view to the left shows the regulating appliance in position before commencing to move the teeth, and that to the right the structure of new bone between them after regulating and their still parallel relation. No doubt every dentist here has been confronted with impacted third molars that he could not locate or tell the position of. The Roentgen-rays are a God-send in the treatment of these cases by removing all the uncertainty.

Fig. 22 shows such a case, which was treated by the dentist in charge, after seeing its position by a skiagraph, by extracting the second molar, and then the third, and replanting the second after filling its roots. The operation was beautifully successful.

Fig. 23 shows another case of an impacted third molar. I show this case, not for this, however, but to show you some pulp stones, which you see in the pulp chamber of the first molar. This patient has had trouble with them in another tooth. On this same slide I have shown a pulp stone in the canal of an extracted lateral which may have been the cause of its having to be extracted.

Fig. 24 shows a case where an external fistula on the chin had been diagnosed as coming from a diseased impacted third molar, and was operated on for removal of same, but unsuccessfully. Later it was skiagraphed, which shows that no third molar has ever formed and shows an abscess about the roots of the second molar which, though unsuspected before, is the cause of all the trouble.

Accidents sometimes happen even with dentists. Fig. 25 shows the cause of a blind abscess at the apex of the second bicuspid inferior. You see the root is only filled half way to its apex. On a more careful look at this picture you will see a broken twist drill in the root. This is beautifully shown stereoscopically. If time permitted I could show very many interesting accidents.

There are so many classes of cases in which the Roentgen-rays are of great service that I cannot show even one typical example

of each. I must, however, refer to its use in the treatment of antrum diseases. You all know that the essential in the treatment of all conditions where pus is forming is to secure perfect drainage which must, if possible, be at the lowest or most dependent point. In the normal antrum this may be anywhere from as far forward as the first bicuspid, and as far back as the second molar, and always an uncertainty until skiagraphy came to our assistance. Fig. 26 was taken to find a broken needle in a root, broken there by the patient. In this the most dependent point is between the second and third molars, and in Fig. 27 it is between the second bicuspid and first molar. The view below in Fig. 27 shows the drainage tube in place for treatment of empyema of this antrum, and properly placed by the assistance of the skiagraphs.

Fig. 28 shows the cause of chronic empyema of the antrum of a patient about sixty, to be a piece of a root which perforates it, and is entirely embedded in the gum tissue. Its abscess is draining into the antrum. This case had been treated for years by a skilful dental surgeon and he could not perfect a cure. The profuse flow of pus and the pain made life almost unbearable to the patient. The skiagraph not only disclosed the cause, viz., the root, but showed that his opening into the antrum for drainage, though large, was not at the lowest point, but in front of it. When the root was removed and the drainage secured at the proper place he said the trouble subsided like magic, and was completely cured. Time will not permit me to show many conditions in which I know you would be interested, like root fillings made through the sides of roots unknowingly, and studies of pyorrhea pockets, etc., and of pericemental abscesses about teeth where the pulps are alive. I must speak of how the stereoscopic work is done, and what it accomplishes. Two pictures are taken of the same case, with all conditions the same except that the tube is moved through a plane two and one-half inches, the distance between the normal eyes. When these two pictures are mounted on a card two and one-half inches apart, and looked at through a stereoscope we see the objects perspective. In this way we can see the exact relation of roots and teeth to each other beneath the gum about as we do above it. Thus in this slide (Fig. 29) we cannot tell which root is inside and which outside, but looking at them stereoscopically as you can here, they are seen in true perspective. In this way we can drill into roots where the canal is entirely obliterated, and by placing a wire within the root and taking pictures stereoscopically, we can see in just what part of the root we have gone and whether we will run through the side if we proceed. Fig. 31 shows the different stages of such a case. I have here a large number of practical cases prepared in this way, and with this cheap stereoscope you can see the conditions beautifully.

I desire to show you one other condition in which the rays assist us greatly. It is in making an artificial fistula for drainage of a blind abscess. It is often very difficult to tell where to drill to or when you have reached it. By placing a piece of wire into the opening and skiagraphing you can see just the relation of your opening to the blind abscess. Fig. 30 shows such a case. The blind abscess is at the apex of the central incisor, and for certain reasons must be reached at once. The first attempt is unsuccessful, for as the picture shows it has not gone far enough. The second has struck it fairly. I will be very glad to answer any questions about the technic you may desire to ask. This coil you have just purchased for your College is an excellent one, so far as the coil itself is concerned, but the interrupter is very inefficient. I do not think it would be possible with it to reduce your time of exposure below two or three minutes, while with a good electrolytic interrupter you should reduce it to nearly one-tenth that time with such a tube as you have now, or with a suitable tube to one-twentieth that time. It is only possible to reduce the time to such an extent as the latter by having a tube that will carry enormous currents without heating considerably. The platinum target of any of these tubes you have would be melted in about a second or less with my apparatus. I will help you make some important improvements in your apparatus before I leave, if possible, such as secondary spark gaps, to increase the penetration, and an electrolytic interrupter properly adjusted to this coil. The tubes you have have not high enough penetration for dental work. The arrangement of your apparatus is not at all convenient for our work, but that you can easily correct.

After a great deal of experimentation I have been able to produce, with the paid assistance of the M. A. Seed Dry Plate Co., St. Louis, Mo., a dental film very far superior to anything formerly available. It is triple coated, and of such a formula as to suit our work especially well. I would advise you to get it, which you can from the firm named above by asking for my special dental film. It must be developed slowly for best results, from one to one and a half hours. Of course the bromide paper put in with the film produces a picture, which is a negative, in a few seconds so you do not require to wait for the negative for immediate information. For some helpful detailed work regarding this whole subject I would refer you to my communication before the third International Dental Congress, Paris, 1900, the transactions of which have not appeared at this date, but will shortly, also to a book on "The Applications of Electricity in Dentistry," which I have nearly ready for publication. I thank you for your patient attention.

CAVITY PREPARATION.

BY S. MOYER, D.D.S., GALT, ONT.

Read before the Toronto Dental Society, April 9th, 1901.

The last decade of the century just closed witnessed important changes in the method of cavity preparation. Previous to that there was but little method in manipulation. Each operator was a law unto himself, and used the instruments at hand to shape the cavities, and endeavored to shape them in such a manner as would prevent the filling from falling out. This was done with little knowledge and less consideration of the stress required to be borne by the fillings, and the margins and supports surrounding them, and with no consideration and no guide as to the direction of the line of margin necessary to prevent a recurrence of caries along these margins. Nor was there much consideration given to the histological structure of the various parts of a tooth and their relation and dependence upon each other for protection, for support, and for nourishment.

Results proved, to the disappointment and very often chagrin of all dentists, that either the operator failed to do ideal work, or that success in operative dentistry was more or less speculative. And results proved, too, that without improved methods and better filling materials, the percentage of failures would rapidly increase with the ever-increasing tendency of teeth to caries with each successive generation.

The World's Dental Congress, Chicago, aroused a new interest in the subject. An instrument for testing the force of the bite, exhibited for the first time by Drs. Patrick, of Illinois, and Dennis, of Chicago, revealed facts that set the dental world thinking. It was a revelation to learn by experiments that the teeth are called upon to bear a stress of from one hundred to two hundred or even three hundred pounds. Dentists began to realize for the first time that the strength required by fillings and their support to withstand the stress placed upon them had been vastly underestimated; and they realized, too, that it was this ignorance that was to a great extent the cause of the failures of so many fillings, especially in bicuspsids and molars.

This led to a desire for broader foundations, stronger walls and better supports for fillings, and to a more careful consideration of the minute structure of the tooth.

About the same time Dr. Williams, of London, and Dr. Black, of Chicago, our scientific authorities, startled the dental world with another announcement. They informed us that

imperfections in the enamel do not stand in a causative relation to decay," to any greater extent than pits and grooves may serve as lodgments for microbes. That "the difference in caries of the teeth is not due to any difference in the calcification of the teeth, but to different conditions of saliva." They tell us that the micro-organisms form little gelatinous plaques, and glue themselves to the teeth, where during the course of their little lives they excrete an acid which causes the disintegration of the tooth. These plaques do not, and cannot, obtain lodgment on surfaces that are habitually kept clean by the excursions of food in mastication, or by other natural or mechanical means.

Whatever the cause or conditions producing these results, the results are identical. We know by daily experience that certain areas of the teeth are liable to be affected by caries, while other areas are almost universally free. The last decade of the century for the first time added method to the outline form of cavities by making the outlines pass along surfaces that are free from the ravages of caries.

Without further preface I shall now ask your consideration of the preparation of a cavity under the following headings, which I borrow from Dr. Black:

1. Obtain the Outline form.
2. Obtain the Resistance form.
3. Obtain the Retention form.
4. Obtain the Convenience form.
5. Remove the remaining decay.
6. Correct the form of and smooth the enamel wall, bevel the cavo-surface angle, and make the toilet of the cavity.

A few words of explanation regarding these headings: by the outline form is meant the outline of the enamel margins of the finished cavity. The termination of this outline has been the result of a more careful consideration of the histological character of the enamel rods and their relation to the surface, of the strength of the dentine and the enamel, and also the relation of the beginnings of decay to the surfaces.

In pit and fissure cavities the outline is determined by removing all enamel overhanging decayed areas, and unsupported by dentine; then opening up all grooves leading from the fissure to such points on the surface as will permit of a perfect finish being given to the filling when completed.

In proximate cavities, buccal and lingual cavities, that is, those which do not begin in pits or fissures, and where uncleanness is habitual (in the lower third), the outline form is based upon a different principle. We now include the area especially

liable to decay at some future time, the area of habitual uncleanness. This frequently requires the cutting away of sound enamel and dentine, and comprises everything that is generally understood by "extension for prevention."

The resistance form is that form of a cavity as will enable the filling to best withstand the stress placed upon it in mastication. This stress, as before said, varies from one hundred to two hundred pounds, or even more. What architect would build on a sloping or rounded foundation? We must apply the rules of physics. Consequently there must be a flat seat for the filling at right angles to the stress of mastication, which also is at right angles with the long axis of the tooth. In the occlusal cavities the surrounding walls will form definite angles with the base. In proximo-occlusal cavities where greatest strength is required, the gingival wall will be cut horizontally from the buccal to the lingual, ending in a definite angle. The floor and step will each form a flat horizontal seat.

The retention form is that form given to the cavity to prevent the displacement of the filling. The resistance form usually provides the greater part of this; but provision must be made for the lateral or tipping stress, especially necessary in proximate cavities in bicuspid or molars. In these provision is made in the form of a step cut into the occlusal surface and slightly and naturally dovetailed. Generally the retention form is secured by having the opposite walls parallel or slightly undercut, depending upon the situation and the direction of the enamel rods. Pits and grooves have proved inadequate and delusive. The retention form alone can properly secure the filling.

The convenience form, though of minor importance, must not and dare not be neglected. After the general form of the cavity has been developed, it will frequently be found necessary to cut back a wall or margin, or slant a step to a certain inclination to offer better access and obtain more direct force from the plugger point, thus securing better accuracy and saving much time to the operator and patient. Another point in the convenience form will be the dipping in of slight undercuts in the gingival angles of the cavity to serve as starting-points for the gold or to hold the first portions of other fillings as they are being packed in place. The importance of carefully securing the first portion of the filling cannot be overestimated.

The next step is the removal of the remaining carious dentine. At this stage very little or none will remain. But in deep-seated cavities the probable exposure of the pulp is a consideration. It is, therefore, important that you do not cut toward

the pulp until the outline form, the retention form, and convenience form have been developed. Then with spoon excavator carefully and completely remove ALL remaining softened dentine. This can be done with little or no pain, and the cavity or exposed pulp will be ready for immediate treatment.

The last step in the preparation of a cavity is a very important one. The cavo-surface angle requires careful attention, as also do the direction of the enamel rods. The operator must guard against cutting away more from the inner than from the outer ends. The angle must be bevelled outward slightly to remove the loose ends of the rods, and to strengthen the angle of the enamel against probable injury in packing or in the filling. Smooth the walls by planing them with a sharp chisel or enamel hatchet. Finally the toilet of the cavity must be prepared. Dust and sweep it with chip-blower and cotton or spunk respectively. Do not wipe out the cavity with any form of liquid whatever. No liquid can be used that will not leave a coating upon the surface of the walls that even alcohol and hot air cannot remove.

Dr. Black lays down this as an important rule: No moisture of any kind whatever should enter a cavity after the last of the cutting has been done; and if by an accident a portion of the cavity should become wet it should be dried thoroughly and then that portion that has been damped should be freshened by cutting away the surface.

The foregoing remarks and explanations are applicable to all cavities. Before proceeding with any special cases in the bicuspid or molars I would ask your consideration of the more minute structure of the enamel of these teeth.

I need not tell you that the enamel is composed of minute rods united by a cement substance of a structure somewhat softer and less resistant; that these rods being parallel are easily split, though very hard to cut; that occasionally the rods will split half way down and then break off; the rods in their lower half being so twisted and interlaced that like a knot of wood they will not split. Let us now take a look at the general direction of these enamel rods, the proper observance of which in preparing cavities will to a great extent determine our success or failure in operative dentistry.

As a general rule the direction of the enamel rods is from the centre of the crown of the tooth to the surface, which they approach perpendicularly. If you tie a string around the middle of the crown of a bicuspid or molar the rods will be perpendicular to that section. From that line up they incline toward the cusps, and from that down they incline toward the gingival line, where

they terminate. In the cusps they are parallel to the length of the cusp. If you pass over the occlusal surface the rods are found to be perpendicular there also. If you further examine the occlusal of a bicuspid or molar that has opened pits or fissured grooves, you will find the enamel rods inclining toward the fissures. If well closed there is less inclination. If you pass from the fissures or pits toward the marginal ridge, you will find the rods first becoming vertical, then inclining toward the ridge.

These facts concerning the direction of the enamel rods are to a greater or less degree borne out by the experience of all of us. For we have learned to notice the direction of cleavage and to feel for the direction of the rods with the bur.

I shall now endeavor to show you, with reasons therefor, the various steps in the scientific preparation of proximate cavities in bicuspids and molars; and if we consider the comparative number of failures, these cavities are the most difficult to fill.

A light upper first molar has decay on its mesial surface, showing a slight breaking away of the mesial marginal ridge, and extending half way down toward the gum margin, and of about the same width.

1. Loosen up with thin scaler the gummy microbe-charged material surrounding the tooth. Feel for contact point, and clean the intro-proximate space with a ligature, then thoroughly cleanse with a jet of warm water.

2. Apply the rubber dam after breaking away the enamel walls sufficiently to determine the gingival line of the cavity. Include at least two teeth toward the mesial (the bicuspids in this case) and the second molar. Secure the rubber to the second molar with a clamp, and to the first molar with a ligature having, if necessary, beads attached. If the forcing down of the rubber presents much difficulty, as it sometimes does wrap a ligature around the little finger of one or both hands, guided by the index finger while you work it and the rubber down to the place. A matrix in certain cases in very deep proximate cavities serves as a very convenient assistance in the proper retaining of the dam.

3. If the proximate teeth are in contact, apply the Perry separator and secure immediate separation, if the circumstance of the case render it at all possible. This will enable you to properly build up and finish the filling.

4. Open the cavity with a sharp, straight chisel, and preferably mallet pressure; chip away the enamel, first buccally, then lingually, until enamel is reached supported by sound dentine. Follow the central fossa as far as you can with a chisel. Then

take a small inverted cone bur, and holding it parallel with the long axis of the tooth, enter it sideways into the dentine just below the dento-enamel junction. Now with firm pressure draw it again and again to the surface, until the pit in the central fossa is reached. Chip away the enamel on either side of the slot made by the bur. Again pass the bur along the slot, pressing it first lingually and then buccally to undermine the enamel. Chip off the enamel as before. Continue this until the step includes the middle third of the occlusal surface, bucco-lingually, and including the pit in the central fossa. After cutting out the buccal and other sharp grooves you will have a step with flat base, definite angles to the walls, parallel walls, and a retention form which is perfect. Next develop the proximate form of the cavity, which in this and most other cases must be extended at the expense of a little sound dentine and enamel. To make the extension bucco-lingually press an inverted cone bur into the dentine at the dento-enamel junction, cut latterly to the buccal wall, squaring out the bucco-lingival, then draw it upwards to the occlusal surface, undermining the enamel wall. Through the opening made chip away the enamel, and then extend the lingual margin and angle in the same way. How far shall we extend the cavities bucco-lingually? Let me quote you a rule: "Cut the lingual wall to a line where its margins will be in view past the proximating tooth when looking across the central incisors at the median line, and extend the buccal wall to correspond." In cases where lines and superficial injury to the enamel extend beyond this margin of the cavity, the margin must be carried beyond the injured portion, for every enamel rod must be perfect and must be supported by sound dentine. Extend the proximate wall gingivally until its margin and its buccal and lingual angles are concealed by the free margin of the gum when the filling is completed. This is easily accomplished by passing an inverted cone bur a few times with hard pressure along the dentine from angle to angle just inside of and against the enamel, thus determining it. Then cut away the enamel and smooth the horizontal floor thus formed.

5. Remove the remaining decay, if any, with a spoon excavator.

6. Plane the enamel walls to a proper form in accordance with the direction of the enamel rods. These rods on the occlusal surface being perpendicular, the walls must also be perpendicular on that surface. On the buccal surface the enamel must incline to the buccal, while on the lingual surface the enamel will incline to the lingual, to correspond with the enamel cleavage.

Slightly bevel the enamel rods with a sharp chisel in order to remove any short or loose enamel rods, and to secure the cavo-surface angle against injury in packing in the filling. To provide convenient points for starting the filling, press a small, inverted cone bur slightly into the dentine in the gingival angles of the cavity, and then draw it a short distance towards the occlusal surface. Dust and sweep, and then arrange the toilet of the cavity, and the filling may be proceeded with.

The case I selected was an easy one. I shall now briefly refer to a few variations of a more difficult nature, but which will follow the directions already laid down in the paper. The upper bicuspid is too much exposed to present any difficulty in either mesial or distal cavities. With them you proceed as with case No. 1, except the breaking away of the enamel in the distal cavities. This can best be done with hand pressure, the chisel being held with the thumb and palm grasp.

In distal cavities in second molars and mesial cavities in third molars, it is not always possible to approach them at the proper angle to square out the gingival angles. In that case use a right-angled hand-piece. If both can be prepared at the same time, and are proximate, the approach is quite easy after the step has been formed.

In this case it is frequently easiest to reach the distal cavity by cutting back from the pit in the dental fossa until the cavity has been entered.

Distal cavities in the upper second molars frequently open more to the buccal than to the lingual surface. In this case it is well to strongly incline the buccal wall toward the buccal surface, and thus secure strong walls and easy access for filling.

Where lower molars have a decided inward tendency, as they often do have, cut the buccal wall parallel with the long axis of the tooth and the gold may be packed against it with reverse pluggers.

Cavities of lower bicuspid that have a strong distal and lingual inclination present the greatest difficulty. Here the right-angled hand-piece and reverse plugger are most needed. Use small inverted cone burs, cut under the dento-enamel line, feel for the direction of the enamel rods, which are usually very much inclined, and carry the step close to the lingual marginal ridge.

In lower molars, where contacts are very broad and flat, the proximal cavities are deepest toward the lingual side, where they undermine the wall as far forward in some cases as the central line of the lingual surface. In all such cases break away the

lingual cusps thus weakened until a point is found supported by sound dentine.

If in occlusal cavities the central pit extends near enough to the buccal wall to weaken it, extend the cavity over the crest of the marginal ridge, well widened toward the mesial and distal cusps. If in upper molars the mesio-buccal angle is badly undermined by decay, or if the mesial cavity has extended far toward the buccal, cut away the cusps for permanent results.

If upper first molars have deep disto-lingual groove weakened by caries, cut away the cusps if undermined, and cut toward the gingival line until proper strength is found.

In all cases, if weak walls or grooves are approached, cut beyond.

I shall now enumerate some of the chief features of cavities thus prepared and properly filled.

1. Every margin is kept clean by the excursion of food in mastication, and by the movements of the cheeks and tongue, except the gingival margin, which is beneath the free margin of the gum. Thus the entire margin is immune from decay.

2. The filling lies in a form of greatest resistance.

3. It is dovetailed in place, and cannot be dislodged.

4. There are no unsupported surfaces to break away—not an enamel prism unsupported by sound dentine.

5. There is no undercut dentine, weakening and disintegrating through lack of nourishment.

6. No part of the filling approaches nearer the pulp than the decayed dentine that preceded it, thus minimizing the effect of the thermal changes.

7. There never can be margins or rough decayed points between the teeth to arrest the food.

8. Cavities thus opened bring to view every part of the cavity and of the work being done.

9. When completed, your conscience tells you that you have done your best.

PYORRHEA.—In the treatment of pyorrhea I first use iodine and zinc to relieve the pain, and then immediately proceed to remove all deposits. The aqueous solution of iodine and zinc I use is prepared as follows: Zinc sulphate as much as will dissolve in cold water. Dissolve one ounce of potassium iodide in two ounces of water and add as much iodine in crystals as it will take up, then take equal parts of the two solutions and put them together. This will make something that is most efficient in the treatment of these conditions, and which I have used with great delight to myself and to my patients.—*Bogue*.

Proceedings of Dental Societies

TORONTO DENTAL SOCIETY.

The first annual clinic of the Toronto Dental Society was held in the Dental College building on Monday and Tuesday, February 25th and 26th.

Dr. W. A. Price read a paper entitled "The Roentgen-Rays in Dentistry.—Illustrated." Discussion by Drs. Peters, Frank D. Price and T. W. Brophy. (See page 203).

DISCUSSION.

Dr. George A. Peters opened the discussion and stated that Dr. Price's paper was an exceedingly full paper, and showed minuteness of detail in his work that Dr. Peters had not seen before; and he thinks that the results must be all that can be expected to be achieved by means of the X-ray. It is used in general surgery a good deal, as for instance where foreign bodies, as bullets, etc., are lodged in the tissues, and he has been able in a good many cases to locate bullets that certainly could not have been located in any other way. He also sees by the demonstration of Dr. Price that it is of great value in locating the lowest point of the antrum, although it may not always be necessary to strike the lowest point of the antrum or any abscess in order to get a cure. Drainage in these cases is very important. The lowest point in the radiograph may not be the lowest point in the situation of the patient's head. In support of the idea in regard to drainage, Dr. Peters illustrated by stating that in drainage of the bladder we could drain that viscus supra-pubically as well as through the perineum. Dr. Peters considered that Dr. Price's hopefulness in regard to the X-ray in the treatment of lupus was optimistic, although it was good in some skin diseases. The X-ray must be handled with the greatest care, and it takes an expert to interpret the X-ray. It is a shadow, and you cannot tell the right hand from the left by the X-ray. He considered that juries should then not be asked to interpret the X-ray; in fact a radiograph should not be submitted to them at all, as they knew nothing about it. Dr. Peters stated that he was glad to hear that Dr. Price had been able to keep the time of exposure down to such a short period; and if we can get an X-ray in thirty seconds it is a valuable matter. He had seen some bad burns years ago, but had not seen them lately.

Dr. Frank Price, Toronto, stated that it seemed refreshing to see and to know that the different waves in ether that we have, such as heat, light and sound, and the X-ray are one and the same,

but of different velocities. It helps us to understand what the X-rays are. He thought that more men should take up some specialty of the subject of dentistry. They had instances that afternoon of men making special study of some branch of dentistry. He considered that the field was wide, and that there was plenty of opportunity for men to take up these lines specially. It would be well to encourage some to take special subjects up and give the balance of the profession the benefit of it.

Dr. Brophy, Chicago, stated that he had been particularly interested in Dr. Price's address and demonstration, especially in connection with those plates which showed the location of the teeth in relation to the antrum, and also the question of opening the antrum at the most dependent point. He was also interested in what Dr. Price had said in regard to the destruction of bone about the abscesses at the roots of the teeth, removing the basis of the roots and getting the cavities filled up with new bone. Now, by means of the X-rays, we were able to recognize cavities about the ends of roots of the teeth, and we were thus enabled to remove these and get a useful portion of the tooth to remain.

Dr. Price closed the discussion by stating that it had been a great pleasure for him to come to Toronto and demonstrate this work to the society.

At the regular monthly meeting of the Toronto Dental Society, May 9th, 1901, Dr. S. Moyer, Galt, Ontario, read a paper on "Cavity Preparation" (see page 210).

DISCUSSION.

Dr. J. B. Willmott, in discussing the paper, took exception to the extreme extension of cavities that Dr. Moyer advocated, on the ground that a great deal of unnecessary pain was inflicted, and tooth tissue needlessly destroyed. He especially opposed cutting instruments with sharp corners, such as inverted cone burs and sharp-cornered excavators. It was his opinion that spoon-shaped excavators had largely supplanted those with sharp corners for this very reason. He did not believe that enamel and dentine are uniformly developed in every individual, but are as certain to have differences in density of structure as different people are to have different shaped noses. He has found mouths in which caries never occurred, not because micro-organisms were not present or because asepsis was observed, but because of the resisting quality of the tooth-tissue. Ordinarily when teeth decay it is an indication of defective tooth development; does not accept Dr. Black's conclusions on this point. Teeth are not all of the same physical structure. Dr. Willmott advocated extending proximate cavities laterally until the margins were well beyond the point of contact. The most convenient order of pro-

cedure would be: 1st, Get sufficient access; 2nd, excavate debris and softened dentine; 3rd, shape the cavity. He does not practise starting a filling with soft or non-cohesive gold. Annealed gold can be packed just as closely to the wall of a cavity as non-cohesive. He strongly advocates the anchorage of the first piece of gold in the wall of the cavity, which cannot be done with non-cohesive gold. A flat base, from buccal to lingual surface, for a filling is not necessary if anchorage pits are used for starting the filling.

Dr. McDonough feels sure that his theory of never cleaning the teeth is correct, because effete micro-organic matter covers the tooth, so that the excretions of the organisms that cause decay cannot get at the tooth. A flat base for a filling is better than a convex one, but not better than a concave. The proximate walls of a cavity should be parallel.

Dr. Capon congratulated the essayist for presenting such an admirable paper. He believed that there is too much dogmatizing in modern theories of preparation of cavities. More latitude should be given to adapt the method to the circumstances in hand. Extension for prevention should be used with a great deal of care and judgment. Soft gold with matrix is the method advocated by Dr. Johnson; starting the filling at angles cut at the junction of the walls with the base of the cavity. Pits for starting fillings were thought to be obsolete and quite unnecessary. He advocated the use of the inverted cone bur. For cutting out fissures it was advisable to break a small piece of the end of the fissure bur as it becomes dulled.

Dr. Trotter opposed immediate separation because sufficient space could not usually be got without injury to the gums by the points of the separator pressing up, while at the same time it became loose. He also believed in the treatment of cavities with antiseptics before filling.

Dr. Pearson believed in adapting the extent of preparation to the conditions of health, teeth, and the tendency to decay.

Dr. J. B. Willmott does not wish to be misunderstood, but says that he believes in extension for prevention, and well remembers the difficulties of inserting gold fillings prior to the advent of cohesive gold. Anchorage pits are advocated in the American Text-book of Operative Dentistry, and can hardly be considered obsolete. There is no objection to an anchorage pit; an expert might be able to build a filling without one, but he could do it much easier with it.

F. J. Adams favors anchorage pits, and believes it to be the best teaching.

Dr. Moyer, in closing the discussion, took exception to characterizing the modern scientific methods of cavity preparation as a fad. Such men as Taft, Black, Johnson, Holly Smith, Darby, Arthur, Weeks, and Guilford, could hardly be called fad-dists, and yet these men advocated the methods presented in the paper, as was shown by correspondence he had in his possession. Dr. Moyer thought that those who most strongly opposed extension of cavities and the use of sharp inverted cone burs had never given such methods of practice a trial, or they would have learned from their patients that extension for prevention is not a painful operation. The reason is that all pressure and cutting is done in healthy enamel and dentine, and from, rather than toward, the pulp. Fillings in proximate cavities where full extension is not made are not considered permanent, nor are fillings considered permanent unless fissures and angular grooves which are near are cut out, and included in the cavity. Dr. Moyer took the ground that drilling pits for starting gold fillings was a waste of time in both cutting the pit and filling it, causing pain to the patient in both cases, besides bringing the filling as much nearer the pulp as the depth of the pit, thus increasing the transmission of heat and cold. Often these pits are cut into unexpected parts of the tooth, because in using a drill it is not easy to tell how deep it is going, while if the pit were made into an angle the depth could be noticed. In distal cavities in molars it is impossible to either make a pit or fill it, and if fillings can be made in these most inaccessible cavities with the greatest ease without a pit, why should they be necessary in accessible cavities? It is quite clear that if pits are used to start a filling the gold must be cohesive, or the object for which they are made is defeated. Semi-cohesive gold, or in fact non-cohesive gold is more adaptable because each flake or layer of gold will slip over the other without cohering, while in the case of cohesive gold the various flakes, of which the pellet is made up, become united into a solid mass, which is stiffer and more rigid to adapt because of its bulk. It is the bulk of the pellet when annealed that overcomes any pliability annealed gold possesses. If gold is not annealed, one particle seems to slide over the other ahead of the plugger in the direction of least resistance, and will undoubtedly spread under pressure. When the seat of a cavity is shaped for resistance only, and not for retention, and that non-cohesive gold can be condensed to the same specific gravity as cohesive, with greater rapidity and certainty (see article in *May Brief*), why should cohesive gold be used in building up to the step in proximate cavities in molars and bicuspid? Quite true, it is often said

that cohesive gold will bear more wear and tear of mastication and consequently the surface should be of cohesive gold. The only advantage that tin and gold or pure tin has in these cases is its adaptability, and every dentist who has had any experience with these materials will admit that they make a superior filling in certain cases.

Replying to Dr. Willmott's remarks *re* the variation in the structure and density of enamel, Dr. Moyer explained Dr. Black's latest statements are to the effect that the difference in density of teeth at different ages and in different people is not sufficient to account for such variations of caries. Observation led Dr. Moyer to accept Dr. Black's opinion that "caries is due to some condition of the saliva." He argued that caries never occur on surfaces that are habitually kept clean. That they are found on smooth surfaces, if not kept clean, as well as in pits and fissures. He drew attention to proximate cavities, buccal cavities along the lower third of the crown, all cavities along the gum margin, especially where they are preceded, as they generally are, by an insinuating white line, which line frequently presents here and there a tender opening. He also drew attention to the fact that after periods of sickness, change of occupation or change of residence, it is frequently found that dentures that in the past showed little inclination to caries, in a short time show evidences of attack with alarming increase. These facts, along with many others, go to prove that defect in tooth structure is not necessary to decay, but that it is the result of some condition of the saliva.

[Owing to the misquotation and misunderstanding of Dr. Black's experiments, observations and conclusions with reference to the density of teeth of different people of the same and of different ages, at the time Dr. Moyer read his paper on "Cavity Preparation," before the Toronto Dental Society, we insert a quotation from Dr. Black's lecture, delivered to his class in the Northwestern University of Chicago, February 25th, 1901.—Ed. D. D. J.]

"FAULTS IN THE STRUCTURE OF TEETH.

"Faults in structure of teeth and their influence as giving opportunity for dental caries, have been spoken of so frequently in my lectures that it hardly seems necessary that we go over this subject at all closely. But I want to say to you that you should not regard them as causes of decay. We often speak of them as causes of decay. Here is a fissure in the occlusal surface of a molar that is deep and sharp, and in that we find decay begins, and we often speak of the fissure as being the cause of the decay.

It is only a cause of decay in the sense of giving opportunity for the beginning of decay. There are very many deep fissures in the teeth of persons immune to decay, and although the opportunity would seem to be as good as in any teeth, yet decay does not occur; indeed, the teeth of those immune to decay are as apt to have fissures and faults as the teeth of those in whom decay is rapid. The band we drive onto a tooth carelessly and fail to cement properly, is not a cause of decay, but brings about a condition that gives opportunity for decay. If the conditions were not present, if the micro-organisms were not growing in the mouth, we would have no decay on account of having driven on that band carelessly so that micro-organisms might grow between it and the tooth. Therefore, we must not regard these faults as causes of decay, but conditions giving opportunity for decay. In that sense they are very important, and we should take a lesson from them as to the management of our operations; as to the necessity for smooth finishes, as to the necessity for removing all overlaps from about fillings, for these rough points, these overlaps under which micro-organisms may grow, give the opportunity for decay. Our object should be to remove all possible opportunities for decay. The management that will do this most successfully will be the management that will be of the greatest benefit to our patients. The interglobular spaces which occur as faults in dentine have been sufficiently explained. When they exist they give opportunity for micro-organisms to burrow in various directions through the dentine, and cause them to form broad cavities, or cavities of unusual form, so that we have variations of form occurring among the cases that are presented to us. But these things are things that give opportunity, not the cause of decay.

"SOFTNESS AND HARDNESS OF THE TEETH.

"Softness or hardness of the teeth has been much talked of in the past, and dental literature is full of it. It has been regarded by the laity as a reason for decay of the teeth. You will hear it continually spoken of among the people, and you will hear it continually spoken of among dentists. This person's teeth are soft and are melting down, chalky, and all that. Now, the chemical constitution of the teeth is not much different between person and person. Those differences in the teeth that influence decay are the differences that we are able to see with the naked eye or with the microscope; they are in the form of faults of physical structure, not faults in the chemical constitution of the teeth, that render one more soluble to acids than another; they

are faults that give opportunity; they are not chemical in their nature. The idea that some teeth are hard and therefore do not decay, or decay very slowly, and that some teeth are soft and decay rapidly because of that softness, has come to the profession through the observation that some teeth decay rapidly and break down into a chalk-like detritus, while the teeth of other persons stand firm and do not decay. This originally gave the impression that the teeth of one person were soft, while the teeth of another were hard. That which was seen has been reported correctly, but the interpretation has been wrong. Again, the teeth of children have been observed to decay much more rapidly than the teeth of adults. This is the general rule as we see caries among our patients. The child's teeth decay rapidly, but if the decay is controlled by proper filling a time comes when they decay very much less rapidly, become very much less prone to the beginning of decay, and finally decay will cease almost entirely. The explanation has been that the teeth were soft before; that they have now become hard and dense. Then, again, another observation has been made. A person whose teeth have seemed to stand firm during their youth, have been practically immune to decay, have suddenly been found to be decaying rapidly; they are breaking down into a chalky detritus; large areas of teeth can be broken away readily; the part is soft and the interpretation has been that the teeth have lost lime salts, that from some change in the system lime salts have been withdrawn from the teeth and that they have become soft. Now, in all of these the statement of facts as to the progress of caries at one time and the immunity from caries at another time has been correct. These observations of facts have been correct and correctly reported, but the interpretation has been wrong. I wish to bring this strongly to your attention because you will meet it if you run over the past literature—which you should do, every one of you—and you will meet it among the dentists with whom you associate; you will meet it among the patients for whom you operate, continually after you go out to practice. And I want to warn you especially not to be misled by these assertions that you will hear among dentists, that you will hear among your patients, and that you will find in the literature.

“This matter has been a matter of long and careful personal study with myself; indeed, the study of caries and the conditions surrounding it, the conditions under which it occurs, if I can say that any one thing has been the study of my life, this one has. It is the condition which I have dealt with most and with which I have spent the most hours in study and experimental work;

not continuously, for one controlling factor in my studies has been this, that when I have arrived at a point at which I can apparently make no further substantial progress in a particular direction, I drop that for the time and take up something else. Then, when I have carried that as far as I can, for the time I drop that and take up something else, and so on, and then return to these at any time when I can see an opportunity to progress a little further. So it is that I have taken up caries of the teeth time after time, and I hope still to make further studies of it in the future, because there is more yet to learn, very much more that we do not know about.

"After years of fruitless work on the reasons why some teeth decay and some do not, and finding all the conditions, apparently, in the mouths of those immune to decay, that should produce caries upon the theory that had been advanced, but did not, I determined to make a complete and thorough examination of this subject of variations in lime salts, or the so-called softness and hardness of teeth; and I published the results of these studies in the May number of the *Cosmos*, 1895. In these studies the teeth of over 100 persons were examined, selected cases; those in whom decay was rapid, those in whom decay was slow, and in those who were immune to decay. Those three classes particularly were the subject of study. I obtained the teeth in various ways. Some of those who were extracting here in Chicago upon whom I could depend as to the observation of persons, collected teeth for me, and others collected teeth for me, and I collected such as I could in my own practice. So that I collected together a large number of teeth, those coming from each individual being retained separately with the history of the individual as to caries, as to conditions in the mouth, etc. All of these teeth were examined individually. They were weighed as nearly as possible in the condition in which they came from the mouth; they were then dried and weighed to determine the amount of water contained in them; then certain parts of teeth were cut and the dentine incinerated, the animal matter driven off, and the lime salts weighed to determine the amount of lime salts in the teeth. This was done with each individual tooth. The results I can give you in a few words. Between persons immune to decay and persons in whom the teeth decayed rapidly, the difference in the amount of lime salts, when footed up in a large number of teeth from each, amounted to one-half of one per cent. Taken at various times during the progress of study, sometimes one would be a little more, sometimes a little less, so that in the outcome of over 100 cases the difference was one-half of one

per cent. Now, most of you have had experience in carving ivory; you have had experience in cutting dentine of the human teeth. The difference in the amount of lime salts between the ivory that you have carved and the human teeth is a little over 20 per cent., the human teeth having that much greater proportion of lime salts than the ivory. Now, you can judge pretty well of the influence that one-half of one per cent. would have in the hardness or in the possible solubility of different teeth. Mind you, this is a comparison as to the amount of lime salts between teeth that decay rapidly and teeth immune to decay.

"It has been widely claimed that there was a great difference in the amount of lime salts in the teeth of children and in the teeth of adults; that the teeth of children had not become sufficiently hardened, and should not be filled with metal because of their lack of density, and that as the person grew older the teeth became harder. This was very carefully looked into. I had a large number of teeth from children and from persons of different ages, and I grouped them. Those under fifteen years old I placed in one group; from fifteen to twenty in a second group, from twenty to thirty in a third group, and so on up, each ten years afterward. In this examination I found there *was* an increase in the lime salts with increasing age. In that group of fifteen and younger, including permanent teeth, down to the age of seven years—I had two first molars that were extracted at the age of seven, and of those extracted at the age of eight, nine and ten quite a number—the difference between the amount of lime salts in these and in the group between forty and fifty years old was 1.43 per cent. That was held pretty closely throughout the examination, showing apparently an actual increase in the lime salts of older persons above that of the child. But see how little it is; only 1.43 per cent.; not enough, gentlemen, for us to appreciate it at all in operations upon the teeth; not enough upon which to base any difference whatever in the treatment of the tooth of the child and in the treatment of the tooth of the adult. Now, don't understand me to say that there should be no difference in the treatment of the child and the adult; don't understand me to say that for a moment; but only to say that so far as the calcified tissues of the tooth are concerned there should be no difference whatever. But remember always that when you have a little child in your hands you have conditions otherwise than the calcific matter in the tooth that are very different from the conditions which you have in the adult; you have a different constitution of the nervous system to deal with; you have a difference in ability to bear pain to deal with;

you have a difference in self-control to deal with, and these go to make up very wide differences between the two cases. But we may fill for the one, if we can get conditions favorable, just as well as for the other, and fillings will stand just as well, if as well made, in the child as in the adult. The difficulty is to make them as well.

"Now, when these studies were given to the profession they were regarded as revolutionary, and good men who had been accustomed to the idea from their youth up that there were great differences in the amount of lime salts in teeth, rebelled against the results found in these studies. Well, this gave rise to some argument, or more statement, perhaps, than argument. A very little notice of it will be sufficient. Charles Tomes, who among the dentists of England is most relied upon as a scientist, perhaps, of any, said in effect in a meeting of the British Odontological Society that these results were so out of common with all our notions of the subject that they could not be accepted, but from the character of the studies as detailed they could not be simply passed over; and he there promised that he would undertake the re-examination of the subject on similar lines, and he had no doubt that the re-examination would disprove the results. At another meeting of the association, a number of months later, Mr. Tomes reported to the association that he had selected some typical cases and made the examination as to the amount of lime salts in the teeth of each, and was surprised to find that his results corroborated mine, and that, so far as he could see, for the present the results would have to be accepted as substantially correct, and that we would be compelled to find some other explanation of differences in the liability of the teeth of different persons to caries. So the matter rests to-day. - We are finding, as I have detailed to you, that there are other means of explaining these differences coming to light, and that we may expect in the not far distant future that these will take material form and be more satisfactory than the explanations we have had previously.

"Now, gentlemen, the observations upon which these deductions had been based were correct. You will see as you go out to practise, you are seeing here in the infirmary, that the observations upon which these deductions had been based were correct. The difficulty was not with the facts observed; the difficulty was in the faulty interpretation of those facts. Now, this is a difficulty that is common; it is common to all men in all the walks of life; we may observe facts correctly and fail to interpret those facts correctly, and thus arrive at deductions wholly at fault. This is one of the difficulties in progress. It is one of the rea-

sons why the German bacteriologists, for instance, have said so constantly that they would report facts and facts only and leave out the deductions. We may go too far in that direction as well, for a deduction that explains a fact is important; a thinkable explanation is better than no explanation at all, even if we do run some risk of going wrong. Other facts will be developed that will finally correct our deductions and put us again upon the right track. In these ways we progress little by little, year by year."

PROGRAMME OF THE DISTRICT DENTAL SOCIETIES OF ONTARIO.

TORONTO DENTAL SOCIETY.

Wednesday, July 3rd, 1 p.m.—C. E. Klotz, St. Catharines, "Lecture, Demonstration and Clinic on Orthodontia."

Thursday, July 4th, 9 a.m.—F. J. Capon, Toronto, "Lecture, Demonstration and Clinic on Crown and Bridge-work, with Special Reference to Porcelain."

Thursday, July 4th, 1 p.m.—F. J. Capon, "Continuous Gum Plate, Crowns and Inlays." Geo. Peters, M.D., "Making Plaster Casts of the Face." D. W. McPherson, M.D., "Ether and Nitro-Oxide Anesthesia." J. J. Wilson, "Johnson Gold Filling." H. Hudson, "Grinding and Backing Porcelain Facings." W. A. Scott, "Filling Root Canals." A. C. Caldwell, "Bleaching Teeth." H. Clark, "Prosthetic Cabinet for Operating Room." W. E. Willmott, "Emergency Crown." W. Woods, "Cases in Orthodontia." C. E. Pearson, "Berry Crown System." W. C. Trotter, "Articulating Crowns." R. J. Husband, "Detachable Facings and Filing Block." D. Baird, "Cast Lower Denture with Rubber Attachment." J. E. Wilkinson, "Varieties of Clasps for Dentures." H. E. Eaton, "Card System of Records." E. Peaker, "Selected." W. Spaulding, "Cement Filling." A. E. Webster, "Measuring the Force Required in Condensing Fillings." F. J. Adams, "Hygienic Porcelain Bridge." C. E. Abbott, "Porcelain Bridges." F. D. Price, "The Use of Electricity in Dentistry." C. W. Lenox, "Seamless Crown." W. J. Hill, "Gold Filling." R. J. Reade, "Amalgam Filling." C. V. Snelgrove, "Gold Filling, using Watt's Crystal Gold, and Banded Logan, using Gold."

Dr. Snow of Buffalo is expected to be present to demonstrate the articulation and occlusion of artificial dentures.

A hearty invitation is extended to the dental profession of Buffalo to spend their holiday with us.

W. G. SPAULDING, *Secretary.*

EASTERN ONTARIO DENTAL SOCIETY.

Russell House, Ottawa, July 3rd, 4th, and 5th.

Meeting will begin at 8 p.m., July 3rd. Reading of Minutes of last meeting. Enrolling members and payment of fees. Election of officers. Retiring President's address. Report of proceedings of Board of Directors of the R. C. D. S. General Business.

July 4th, 9 a.m.—Installation of officers. W. B. Wegant, Morrisburg, "Burnishing Gold Fillings." Dr. Klotz, "Orthodontia."

July 4th, 2 p.m.—M. G. McIlhinney, "Selected." C. E. Klotz, "Orthodontia."

July 4th, 8 p.m.—Entertainment of delegates by Ottawa dentists.

July 5th, 9 a.m.—C. A. Martin, "Selected." F. J. Capon, "Crown and Bridge-work."

July 5th, 2 p.m.—Paper, selected. F. J. Capon, "Crown and Bridge-work." Other papers and clinics will be added.

W. R. CAVANAGH, Cornwall, *Secretary*.

LONDON DENTAL SOCIETY.

Will meet July 2nd, and 3rd, in medical department of Western University, London.

Papers.—Chas. S. Butler, "Diseases of Dentition." Sylvester Moyer, "Enamel and its Consideration in Cavity Preparation." W. A. Burns, Local Anesthesia." Charles Fitzsimmons, "Combination Gold Filling, Amalgam, and Gutta Percha." Robert Ovens, M.D., "Diseases of the Antrum." Hadley Williams, M.D., "Pathology and Treatment of Cleft Palate." J. Mills, "Some Modification of the Condit System." C. E. Klotz, "Orthodontia." F. J. Capon, "Crown and Bridge-work."

Clinics.—H. R. Abbott, "Quick Method of Replacing Facings on Crowns and Bridges." S. P. Reynolds, "Banded Logan Crown." C. S. Butler, "Correct Occlusion." H. F. Kinsman, "Unsoldered Porcelain Facing." W. A. Burns, "Local Anesthesia." A. G. Fee, "Selected." L. H. Dawson, "Preservation of the Pulp." C. N. Abbott, "Curved Cusps." J. Mills, "Some Modification of the Condit System." S. Moyer, "Consideration of Enamel in Cavity Preparation." W. S. Westland, "Dummies for Gold Bridges, using the Morrison System." C. Windsor, "Condit System." C. F. Piper, "Emergency Crown." Solon Wolverton, "Artificial Velum." J. N. Wood, "Re-sharpening Burs." F. L. Wood, "Rapid Gold Filling." Morley

Braddon, "Correct Method of Taking a Bite." O. I. Cunningham, "Bleaching Teeth." A. E. Santo, "Original Matrix for Anterior Teeth."

A. E. SANTO *Secretary.*

JUNIOR EXAMINATIONS R. C. D. S., 1901.

The result of the recent freshmen and junior examinations at the Dental College are as follows:

These freshmen are admitted to the junior year:—Ernest Franklin Arnold, Daniel J. Bagshaw, Arthur Joseph Bradley, Walter Norman Brown, James Edward Black, Harold Clarkson, Charles Arthur Corrigan, Wm. Clark Davy, Clarence M. Dent, Hubert W. DeRenzy, Leo Doran, Robert Lorne Dudley, James Robertson Duff, Henry Edward Elliott, Theodore Wm. Elliott, Benjamin O. Fife, C. Jos. Freeman, O. Garnet Hassard, Alva E. Heacock, Victor LeRoy Heath, Frank L. Hendry, Leonard D. Hogan, Herbert Irvine, Wm. Kennedy, H. Moore Little, George Edwin Long, George Edward McGuire, Daniel McM. McIntyre, Jas. J. McKenna, Lachlan C. McMurray, Wm. J. McMurray, Wm. H. Milsap, Geo. F. Moore, Arthur Morris, Edward Charles Pickard, P. B. Proudfoot, Aaron K. Reynolds, H. E. W. Richardson, H. O. Richardson, Hatton A. Robertson, Herbert M. Sanderson, Jas. A. Slade, Albert V. Summers, B. Taylor, Herbert Edward Watson, Abbie L. Walker, Charles F. Watt, John Ralph Will, William H. Wright.

FURTHER EXAMINATIONS.

To take a further examination: Anatomy—E. F. Armstrong, A. W. Ellis, G. W. Everett, W. B. Halliday, A. H. Hoskins, O. W. Leslie, J. Loftus, Charles Sale, M. A. R. Thomas, W. G. Wood. Chemistry—G. W. Everett, J. M. Sharpe, A. A. Pinard. Histology—G. F. Gilroy, J. W. Kinnear. Prosthetic Technic (Metallurgy)—Armstrong Everett, C. B. Fraser, C. H. Jewet, Kinnear, Leslie, Sharpe, Thomas.

PRACTICAL TECHNIC.

To complete practical technic: Armstrong, H. Clarkson, Dent, Doran, Duff, Ellis, Fife, Freeman, O. G. Hassard, Heacock, Hendry, Hogan, Irvine, Jewet, Kennedy, Leslie, McIntyre, J. McKenna, W. J. McMurray, Morris F. Price, Proudfoot, Sale, Sharpe, Thomas.

JUNIORS NOW SENIORS.

Juniors admitted to senior class: Robt. Alexander, Fred. N. Badgeley, Ernest S. Baker, Geo. Wm. Bald, Jas. A. Brett, Fred. Britton, Andrew Brown, Frank G. Conklin, M. P. Corrigan, Rollin Dickson, Walton Dixon, Howard Dunn, Geo. O. Duprau, W. P. Finlan, Howard Fowler, Geo. A. Fraser, Charles Morley French, Matthew H. Garvin, Robert Edgar Hassard, Wm. Yates Hayden, A. E. Jamieson, Jas. B. Johnstone, John Milton Jones, Fred. T. Knight, Edward E. Loftus, George Mills, Alexander McKentry, M. Peterson, Harris Poppelwell, Thos. A. Routledge, Durward Stratton, Charles E. Sutton, Thomas Geo. Thompson, Percy H. Vandervoort, Frederick L. Williamson, H. F. Wood, T. H. Wylie.

SUPPLEMENTALS TO BE TAKEN.

To take further examination: Anatomy—G. H. Coram, A. G. Fraser, O. K. Gibson, G. E. Gilfillan, J. H. Greenfield, A. E. Knapp, W. A. Millyard, W. D. Moore, J. P. McLachlan, O. Peaker, W. C. Pickering, W. G. Price, A. P. Rutherford, A. E. Monroe. Practical Chemistry paper—W. D. Moore, C. G. Scott. Theoretical paper—C. G. Scott. Operative dentistry—P. Clarkson, C. G. Scott. Prosthetic dentistry—A. E. Knapp. Orthodontia—H. P. McKenna, W. G. Price.

To complete technic: First year—F. T. Knight, E. E. Loftus, H. P. McKenna, O. Peaker, M. E. Peterson, W. G. Price, F. L. Williamson, M. C. Arnold, J. A. Brett, W. P. Finlan, J. H. Greensfield. Orthodontia—E. S. Baker, M. C. Arnold. Bridgework—M. C. Arnold, H. P. McKenna.

**EXAMINERS IN DENTISTRY FOR ROYAL COLLEGE
OF DENTAL SURGEONS.**

The examiners in dentistry for the Royal College of Dental Surgeons, 1902, are as follows: Presiding Examiner, Dr. J. B. Willmott; physiology, Dr. Primrose; prosthetic dentistry, Dr. G. A. Bentley; medicine and surgery, Dr. D. Clark; operative dentistry and pathology, Dr. S. Moyer; chemistry, Dr. W. C. Trotter; materia medica and therapeutics, Dr. W. J. Bruce; anatomy, Dr. F. N. G. Starr; dental jurisprudence, Dr. B. Spencer; orthodontia, Dr. C. E. Pearson; practical dentistry, Dr. E. C. Abbott.

WESTERN DENTAL ASSOCIATION.

Monday, July 29.—Morning session, 10 a.m.: Routine business; election of officers; president's address; election of members, etc. Afternoon session, 2 p.m.: Dr. C. P. Banning, Winnipeg, "Adaptation of Artificial Dentures." Dr. A. L. McLachlan, Carman, Man., "The Care of Children's Teeth." Dr. B. J. Curry, Winnipeg, "Abscess of Antrum of Highmore." Dr. C. N. Johnson, Chicago, "Cavity Preparation—a consideration of the form that should be given the various classes of cavities, the instrumentation of the operation, and the reasons."

Tuesday, July 30th.—Morning session, 10 a.m.: Dr. N. Schnan, Rat Portage, Ont., "Use of Moss-Fibre Gold." Dr. C. N. Johnson, Chicago, "Gold Filling." Afternoon session, 2 p.m.: Dr. G. J. Clint, Winnipeg, "Removal of Pulp; Immediate Root Filling; Use of Retaining Screws and Lingual Surface Matrice." Dr. W. D. Cowan, Regina, "Instructing our Patients." Dr. G. F. Bush, Winnipeg, "The Undesirable Side of Some of the Preparations Used in Dentistry." Drs. Johnson and Clint, "Question Drawer." Announcements; adjournment.

All visiting dentists welcome.

GEO. C. MATHISON, *Secretary*.

GRADUATES OF CHICAGO COLLEGE OF DENTAL SURGERY, 1901.

The nineteenth Annual Commencement was held at Central Music Hall, Tuesday April 30th, 1901, at 2.30 p.m. Class of 1901:—Gustave Adolph Anderson, Thos. Albert Alexander, Jas. Walton Ames, Dane Randall Allen, Albert Edward Aunger, Wm. Henry App, Lester Franklin Bryant, Claude Bertram Brownell, Wilbur Parsons Buck, Asa David Clifford Barnes, George Arthur Brown, Samuel Hamilton Behringer, Orville Sylvester Burnett, Edmund Cecil Borley, Chandz Berthold Bell, Irving Wilson Bean, Chas. Wm. Benson, Geo. Rowland Bardwell, Cecil Vincent Connole, Andrew Culhane, Leonard Wright Cleveland, Ross Elbert Chandler, Frank Edward Collins, Fred Claire Clow, Orville Chauncey Clemens, John Franklin Curran, Jacob Burton Carey, Charles Roland Cretors, Thomas Henry Deacon, Israel Drozdowitz, Cyprien Buisson Dezell, Charles Arthur Easterly, Henry Brown Ebner, Thad Luther Farnsworth, William Harry

Ferguson, Theodore Fred Fox, Frank Emmerson Follett, Samuel Wilbur Fahrney, Frank Fernando Fish, Carl Fossum, Delne Muller Field, Charles Celdon Finch, George Albert Gehbe, Willard Graybeal, Joe Herbert Gleason, Charles Lewis George, Thorvald Levin Gerner, Andrew Curtis Griffith, Karl Herbert George, John Frank Gabriel, Leonard D. Grant, Horace Elias Griffin, Hubert H. Geiger, Morley Samuel Gallagher, James Albert Garland, Rowland J. Hollenbeck, William Noel Hixon, Andrew Thomas Hummel, William Bixby Harris, Timothy Aloysius Hardgrove, Fred Watson Heatlie, Hezekiah Hayes, William Hausmann, jr., John Carl Huecker, Benj. Naylor Hughes, Tobias Henry B. Hocking, Philip Heyward Hart, Roderick Houston, Henry Helot, Stanley Heymar, Robert Holt, William Warren Hussey, David Timothy Jones, John Arthur James, Louis Edward Jordan, Martin Luther Johnson, Arne Krog Jansen, Corliss Howard Jones, Sydney Joseph Knowles, Otto John Kolar, Leander King, Walter Smith Kyes, George Peter Kalk, J. Ambrose Kelley, Garnett Powell Kenney, Edward Dixon Kenward, Warren Leroy King, John Albert Loomans, John Peter Lederle, Levi Greene Lemley, Carl Alfred Lovgren, John Harold Lee, Frank Stafford Locke, John Robert Leib Robert Hanson Libby, Wendell Morse Lemon, Everett Elber Lane, Harvey Clinton McMullen, William Randolph McLean, John Tait Murray McCallum, John Robert McCoy, Rae Proctor McGee, Thomas George McGrory, Edwin Lange McKee, Harry Storrs Miles, Niels Matzen, Frederick Felix Molt, Daniel Raymond Murray, James Jay Mount, Albert Warren Marshall, Edwin Alfred Mead, Donald Marion, John Thomas Miller, John Clark Young Moore, David George Mahood, Arnold Denbrow Alfred Mason, Daniel Edward Maloney, Stephen Henry Matter, William Clyde Marks, Samuel Cloud Noble, Paul Sheriff Orth, William Oliver Ogle, James Edgar Paul, Charles Elwood M. Parker, Louis C. Proctor, Percy Thomas Perry, Samuel S. Patterson, Ira D. Phipps, Rudolph August Pellage, George Harold Pace, Alexander Pope, Luther Hansford Phipps, William Satterlee Potter, jr., Samuel Arthur Pangburn, George Abraham Russell, Oliver Thomas Robinson, John Mathis Risley, Clarence Lecell Rork, Bert Samuel Russell, Alex. Adams Richardson, jr., Richard William Reinhart, Matthew Joseph Reidy, Sheldon Robert Ross, Tennyson Joseph Ricard, Charles Amasa Rhoads, Harold Roy Read, Hagbart J. Rice, William Kean Ramsey, William Beckwith Reeve, D.D.S., George John Rehm, Henry Acton Roan, Frank Robert Swan, Herman Frederick Schleiffarth, John Joseph Sullivan, James Rex Sholl, Allan

Ezra Shaver, Oscar Henry Sorsen, Louis Schultz, Ervin Earl Smith, Max Coulter Shuler, John Adolph Schleuter, jr., Arthur Flagg Switzer, Guy De Vere Schaffner, John Joseph Schultz, Claude Adams Sherman, Kazuo Sato, Victor Robert Schiller, Charles Shepherd Tuller, Walter Emery Tennant, John Harris Taylor, William Hamilton Tweedle, Garnet Morley Trewin, Gordon Tucker, Albert Tucker, Allen LeGrand Vaughn, William Asa Winters, Adrian Lafayette Wallick, Johnson Conrad Winters, Winfield Walter Walker, Maurice Vincent Wolfe, Charles Fremont Watt, Elmer Henry Weber, Clinton Cassius Webb, Floyd G. Wolcott, Randall Smallwood Williams, Harry Walcott Walker, Charles Eben Warner, Leslie B. Young. Number of matriculates for the session, 638.

LOUISVILLE COLLEGE OF DENTAL SURGERY.

Commencement exercises of the Louisville College of Dentistry, the Dental Department of Central University of Kentucky, were held at Macauley's Theatre, on May 8th, at eight o'clock. The degree of D.D.S. was conferred by L. H. Blanton, D.D., Chancellor, on fifty-nine men, viz.: Luke E. Blair, Minnesota; Jesse Baxter Blessing, Indiana; H. Gayle Bohannon, Kentucky; J. Wm. Boyd, Ky.; Southwell Brace, Minn.; J. Prue Brashear, Ky.; Emmet Cecil Britt, Missouri; Robert Lee Britt, Missouri; Robert Kelsey Brown, Kentucky; Edward Washington Brown, Minnesota; Elvis Austin Carson, Kentucky; Alfred Edwin Chambers, Kentucky; Guy Kurtz Clark, Kentucky; Henry Clay Connor, Kentucky; Wallace Magness Coulson, Kentucky; George Malcolm Creighton, Minnesota; William James Crockett, Tennessee; L. Griffith Crume, Kentucky; J. Francis Combs, Texas; Thos. L. Davis, Arkansas; Howard Spencer Doyle, Ky.; John Dieterich, Ill.; John H. Dye, Ohio; Willard E. Eby, Neb.; Robert W. Gaston, Miss.; James Green, Kentucky; Wm. Henry Gregory, Alabama; William Bernard Hendricks, Kentucky; Oscar B. Heavrin, Kentucky; William H. Hanning, Indiana; John David Hiller, Minnesota; Miss Aimee L. Jones, Kentucky; Henry Leighton Jones, Australia; Charles Elbert Jenks, Massachusetts; Ewell Joseph Laiche, Louisiana; William G. Lockhart, Kentucky; Earl Thomas McCarthy, Wisconsin; Henry Dean Moorman, Kentucky; Somerville S. Mayfield, Alabama; Charles Lee Nance, Mississippi; Charles Cromwell Patteson, Kentucky; David Alma Parish, Ky.; Robert M. Ray, Ky.; Roscoe Conklin

Richardson, Ky.; Byron Darius Rivers, Miss.; French V. Smith, Texas; T. Dexter Smith, Ky.; Lawson W. Smith, Kentucky; Alden Irving Spencer, Florida; John Daniel Stevens, Alabama; P. Lawrence Stone, Tennessee; William Taylor, Kentucky; George Henry Thompson, Illinois; William Frederick Trusty, Kentucky; Francis A. Ulen, Kentucky; James Durward Wilborn, Mississippi; Sidney Clarence Wilson, Kentucky; James R. Williams, Kentucky; James Warren Wooten, Mississippi. The number of matriculates for the session was 212.

VERMONT BOARD OF DENTAL EXAMINERS.

A meeting of the Vermont Board of Dental Examiners will be held at the Pavilion Hotel, Montpelier, Wednesday, July 10th, 1901, at 2 o'clock p.m., for the examination of candidates to practise dentistry. The examination will be in writing, and includes anatomy, physiology, histology, bacteriology, chemistry, metallurgy, pathology, therapeutics, surgery, materia medica, anesthesia, operative and prosthetic dentistry, together with an operation in the mouth. Candidates must come prepared with instruments, rubber dam, and gold, also candidates will be required to take an impression, articulation, and set up a set of artificial teeth. Applications, together with the fee, ten dollars, must be filed with the Secretary on or before July 1st.

GEORGE F. CHENEY, *Secretary*,
St. Johnsbury.

Selections.

SYPHILIS FROM DENTAL INSTRUMENTS.

BY DR. WILLIAM L. BAUM, CHICAGO.

The article reports six cases (*Journal of the American Medical Association*) treated by the author, in which the disease had been acquired from dental instruments.

The first case was that of a young dentist, who undoubtedly had syphilis, but in whom was no evidence of its acquisition except from a sore made with an instrument that he was using, when filling teeth, the wound being on the right index finger, near the matrix of the nail. He scouted the idea of the owner of the teeth he was then filling having syphilis, since she was a

most estimable woman, a social leader, in whom it would be almost a crime to suspect the presence of syphilis. Dr. Baum adds: "This last remark only too frequently presents the view of many members of our profession, as well as dentists, forgetting, as they do, that syphilis is a wide-spread disease, and that it is not necessarily a reproach to its victim, but often, perhaps more often than it is believed, innocently acquired."

The second case was that of a fifty-nine-year-old man who had gotten a chancre on his tongue from dental instrument. The syphilis was a typical case. The author concludes his report of the case with the words: "The patient made a rather uneventful recovery." The author is professor of skin and venereal diseases in the Post-Graduate Medical School, Chicago. It was at that school that case three applied, having a chancre on the lower lip, it having been acquired from a wound made by a dental instrument.

Case fourth was a woman, whose husband was healthy, they having five children; her injury from the dental instrument had been on the tongue.

Case fifth was that of a fifteen-year-old girl, who had had a tonsillotomy done by a dentist who did not boil his instruments, and who had removed another tonsil with the instrument in question a few days before.

The sixth case was that of a forty-seven-year-old man whose initial sore was on the upper lip, at a point where, a few weeks earlier, a dentist had made a slight wound.

In all these cases, the infection might have been from drinking utensils, pipes, etc., soon after the receipt of the wound from the dentist's instrument, though this is hardly probable. Syphilitic contagion may easily be carried by instruments or by the hands, but there must always be some abrasion present or it cannot be inoculated.

When syphilis is diagnosed, the patient should be sent to a dentist, in order that caries of the teeth may be remedied and gingivitis treated before anti-syphilitic treatment is begun. These precautions are necessary because they greatly lessen the dangers of hydrargyric stomatitis. Each dentist should be familiar with the appearance of syphilitic lesions to be met with in the mouth or fauces, and he should personally supervise the disinfection of his instruments by repeated boiling and immersion in formalin and creolin solutions. It might even be well to keep some instruments for use upon syphilitic cases only.—*Albany Medical Annals.*

Dominion Dental Journal

EDITOR :

A. E. WEBSTER, M.D., D.D.S., L.D.S. - - - - TORONTO, CAN.

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VOL. XIII.

TORONTO, JUNE, 1901.

No. 6.

DENTAL COLLEGES AND THEIR COURSES.

The following questions were sent to thirty dental colleges in America and Great Britain. Replies were received from nineteen.

1. What is the length of your regular college session in which the infirmary is open for students and patients?

2. Is there a spring or summer session during which time the infirmary is open? If there is such a session, how many students availed themselves of its benefits last year?

3. At what time of the day does the infirmary open to students and patients? At what time does it close?

4. How many dental chairs are in the college for use in both prosthetic and operative departments, all told?

5. How many students are in attendance at your college this year?

6. How many demonstrators are on the floor of the clinic rooms at any or all times when the infirmary is open?

It will be noticed that out of the nineteen schools replying, that twelve have a longer course than is required by the National Faculties Association, and of the remaining seven five of them have a spring and summer session, so that their students may have further opportunity for practical work than is given in the regular winter session. There are only two schools left, and one of these has a compulsory pupillage. Judging from this, the regu-

COLLEGES.	Length of Course.	Spring Course.	No. Attending Spring Course.	Hours per Day for Infirmary Work.	No. of Chairs.	No. of Students.	No. of Demonstrators.
	Months						
University of California.	9	Yes	20	9.00 to 5.00	44	150	4
Guy's Hospital, London, Eng	9	Yes	..	9.00 to 5.00	55	150	4
London School of Dental Surgery (Eng.)..	9	Yes	..	9.00 to 5.00	100	110	14
Philadelphia Dental College.....	10	Yes	40	9.00 to 3.00	126	400	11
Pittsburg Dental College.....	10	Yes	45	9.00 to 5.00	28	180	9
University of Pennsylvania	9	No	..	.....	130	420	4
College of Dentists, Cleveland.....	8½	No	..	9.30 to 4.30	50	102	4(s)
Chicago College of Dental Surgery	7	Yes	109	8.30 to 5.30	150	600	14
University of Maryland.....	7	Yes	30	1.00 to 6.00	50	206	12
Milwaukee Medical College	7	Yes	20	8.30 to 6.00	35	185	3
Pennsylvania College of Dental Surgery..	8	No	..	9.00 to 4.00	50	295	7
New York Dental School.....	7	..	..	9.00 to 2.30	14	45	2
Northwestern University, Chicago.....	7	Yes	30	8.30 to 5.30	162	520	20
Detroit College of Medicine (D.D.).....	9	No	..	2.00 to 5.00	44	140	2
Dental Dept. of Baltimore Medical College	7	Yes	6	2.00 to 5.00	18	87	2
Harvard University.....	9	No	..	9.00 to 6.00	57	125	4
Ann Arbor.....	9	No	..	1.30 to 5.00	85	265	5
Royal College of Dental Surgeons.....	7	No	..	9.30 to 12.30	36	150	4
College of Dentistry, Minnesota University	8½	No	..	8.30 to 5.00	46	100	3

lar course laid down by the National Association of Dental Faculties is not long enough. One way out of the difficulty is to make the course four years instead of three; another is to increase the length of each session, which is quite impossible, or at least unwise, in schools whose sessions are now nine months or more. A student who gives attention to his work for nine months in the year has done all that can be expected from a young man, who should be aiming to obtain an education that is wider than is given in a dental school. Four years' course must

come. It is to be noted that in England the course is only two years at college, and two years with a preceptor.

The number of students in attendance at the spring and summer sessions in most cases is only approximate. As a rule, students come and go, so that the whole number stated in the table is not in attendance during the whole five months between the close of the regular winter session and the opening of the next one.

There is a marked difference among the schools as to the number of hours the infirmary is kept open during each day, ranging from three to nine hours. Where the hours per day are short, the difference is often overcome by having a large number of chairs for the number of students, while in some cases the time is short, chairs are few, and number of students is large.

The number of students for each chair ranges all the way from one to six, and the number of chairs for each demonstrator from three to twenty-two.

By taking into consideration the number of hours the infirmary is open per day, and the number of chairs in the college, and the whole number of students, it can easily be found that it is possible for a student in some schools to put in almost four hours' work at the chair each day of his three years at college, while in others all that is possible is forty-five minutes.

Even admitting the chances for error in the foregoing table, it contains a great deal of comparative data that is of value to college authorities who are anxious to know how the opportunities given their students for infirmary work compares with others. Those who are interested, if they so desire, can extend the figures of the table in such a way that the comparative time given to infirmary practice will be shown.

DR. F. D. PRICE'S GIFT TO THE DENTAL COLLEGE, TORONTO.

For some years Dr. Price of Toronto has been making a careful study of electro-therapeutics and electric dental instruments, and finding them of great value to the dentist, he thought it unfortunate that our college offered very little opportunity for the students, and through them, eventually, the profession, to become acquainted with the uses of electricity in dentistry. The profession as a whole, which really governs the

dental college, seems to take little interest in electric instruments, and probably because of not having been educated in the subject. The college by right owes to the student some practical knowledge of the use of electricity in dentistry. Dr. Price, believing that the best educative force would be the instruments themselves, proposed to the Board that if they would supply a suitable cabinet, and place it in the infirmary he would supply the instruments; this was done, and at the last meeting of the Board of Directors a resolution was passed thanking Dr. Price for his generous gift.

The cabinet contains the following instruments:

1. A lamp for illuminating the mouth, with mirror, and an adjustable guard for shading the eyes.

2. A powerful lamp for diagnosis. Any deposits or caries are easily seen because of the translucency of the teeth.

3. A combination of lamp, mirror and prop to hold the mirror in any part of the mouth, chiefly used for inserting posterior or palatal gold fillings.

4. An attachment to engine hand-piece to throw a light and a stream of warm air on the revolving bur. Thus the cavity is made light, dessicated, desensitized, and quickly and easily excavated, as no chips remain in it to obstruct the vision.

5. An air-heating syringe, air supplied by compressed air tank.

6. Compressed air apparatus.

7. Air heating syringe, air supplied by bulb.

8. Pulp-canal drier, copper broach, heated electrically.

9. Gutta-percha spatula.

10. Wax (laboratory) spatula.

11. Water warmer, with attachment to hold water at any desired temperature.

12. Cautery knife, chiefly used for removing interstitial growths of gum tissue without hemorrhage.

13. Electric gas igniter, for operating room or laboratory.

14. Gold annealer.

15. Melting furnace, removing base metals from gold, oxidizing them by extreme heat.

16. Indicator for testing vitality of a tooth without removing filling. If alive, sensation; if dead, no feeling.

17. Electrolytic (cataphoric) outfit, operated either by dynamo or battery current, with both metal and water rheostats in series or in parallel, to test the relative values of the two currents. Uses of instrument, sterilizing putrescent roots, sterilizing and stimulating abscesses, bleaching teeth, and desensitizing any tissue.

18. A rheostat for controlling heavy currents.

From year to year, Dr. Price expects to add new appliances, as soon as they are shown to be useful to the dentist.

Editorial Notes.

DR. ARTHUR JEMISON is located at Millbrook, Ontario.

SIR EDWIN SAUNDERS, who was dentist to Queen Victoria, is dead.

TYPHOID fever is very often attributed to contaminated cysters.

A HOSPITAL for the consumptive poor will be erected in Toronto.

DR. F. MCINTOSH will practise his profession at Hawkesbury, Ont.

ALFRED A. HICKS, of Watford, Ontario, is among the graduates of Philadelphia Dental College, 1901.

DR. W. E. WILSON, graduate of the Royal College of Dental Surgeons, April, 1901, has located at Hastings, Ont.

DIED—At Midland, Ont., May 25th, the wife of Dr. W. H. Mosley. The remains were interred in the Lakeview Cemetery, Midland, May 27th, at 3 p.m.

DR. J. S. CHAMBERS, graduate of the Royal College of Dental Surgeons, April, 1901, has opened an office for the practice of his profession at 277 Spadina Avenue, Toronto, Ont.

THE wife of the late Dr. Revell, of Woodstock, died May 16th as the result of burns received a week before from her clothing, which took fire from a small stove in her bed-chamber.

DR. K. C. CAMPBELL, who was a member of the demonstrating staff of the Royal College of Dental Surgeons during the session of 1900-1, is for the present located in Carlton Place.

THE Russian railways are to be equipped with special cars for the transportation of sick persons. They are to be made with three separate compartments, one for infectious diseases, one for ordinary diseases, and one for insane patients.

SWIMMING and life-saving from drowning is part of the curriculum of the public schools of Australia. What is done in this direction in the public schools of Canada, where such a large proportion of the population are exposed to the dangers of drowning?

HOLMES—DOHERTY.—At "Lilacwepha," the residence of the bride's father, by Rev. W. J. Holmes, of London, father of the groom, assisted by Rev. G. W. Howson, Clinton, Miss Lena M. Louise, second daughter of W. Doherty, Esq., to Dr. G. E. Holmes, of Clinton.

DR. CROUSE says: "The dentist who can take a family of little children, whose nerves stick out, so to speak, like the quills of a fretful porcupine, soothe them, and carry them through painful operations, needs to be a good student of humanity, or of human nature, to begin with."

If you place dependence upon concoctions and drugs, and things of that kind, for taking the place of manual labor in cleaning teeth, you are placing your dependence upon something that is almost valueless. Medicines are only useful to correct, not as a steady diet.—A. W. HARLAN.

AMONG the list of graduates of the Chicago College of Dental Surgery of 1901, we are pleased to notice the names of J. H. Deacon, J. A. Garland, Arnold Mason, G. M. Trewin, and A. E. Shaver. These gentlemen attended the first two years of their course at the Royal College of Dental Surgeons, and will complete their qualification in Ontario next year.

THE editor of the DOMINION DENTAL JOURNAL wishes to acknowledge contributions to the Beers' fund from the following: G. E. Hanna, Kempville; F. J. Capon, Toronto; Harold Clark, Toronto; J. B. Willmott, Toronto; C. N. Johnson, Chicago; J. Neelands, Lindsay; L. G. Campbell, Markdale; A. E. Webster, Toronto.

At the different district meetings to be held in Ontario, July 2nd, 3rd, 4th and 5th, under the auspices of the Board, there should be some effort made to acquaint the profession with the advisability of establishing a Dominion Dental Council. It will be a golden opportunity for the different members of the Board in attendance to detail the efforts they are making to bring about the nationalization of the Dental profession of Canada.

DR. T. GALLAGHER, graduate of the Royal College of Dental Surgeons of 1900, who has been associated with Dr. Ross for the past year, has sailed by way of England for South America. Dr. Gallagher's travelling companion is Mr. John Drover, who was Dr. Capon's mechanical workman for so many years. Mr. Drover has just completed his second year at college, and has accepted a position as assistant to a dentist in Buenos Ayres.

NEW BUILDINGS FOR THE HARVARD MEDICAL AND DENTAL SCHOOL.—A magnificent group of buildings for the Harvard medical and dental schools is to be erected in Boston at a total cost of over \$2,000,000. Five buildings will be devoted to the medical school and one to the dental school, and there will also be a power-house. All are to be classical in style, and built on the unit system, which will admit of almost unlimited harmonious addition. The five buildings of the medical school will surround three sides of a court. All the buildings will have a light stone exterior and will be fire-proof.

THE BUBONIC PLAGUE.—It is believed that the fleas that always accompany the rats on shipboard are the chief source of the transmission of the disease from one country to another. Until a few weeks ago there had been no satisfactory way of destroying ship rats. A method of pumping the hold full of sulphurous dioxide, which is a heavy gas and fills the lower portions first, thus forcing the rats to open places to get air before they die, has been tested in several ships, and proved very satisfactory. The fleas accompanying the rats die with them.

TOOTH powders, liniments, and salt in bath water are directly of little value, but indirectly they serve an excellent purpose. The majority of people have a very great deal of reverence for medicines (because, perhaps, there was at one time certain superstitions or mysteries about them), while they have but little respect for mechanical treatment. If a patient is given a tooth powder, he believes the use of it will prevent and cure many of the diseases of the gums and teeth. What really happens is that he cleans his teeth and massages his gums while using the powder, and it is this that is a benefit. Liniments in themselves are not nearly so valuable as the massage the parts get during their application. Few patients would tolerate the necessary amount of rubbing if drugs were not used. So, with the salt in the bath, while the salt water is being applied the skin is being cleaned, which is of chief benefit.

CONTRACT DENTAL SURGEONS IN THE ARMY.

The following are the subjects on which candidates for positions as Contract Dental Surgeons in the Army are examined: Anatomy, Physiology, Histology, Physics, Chemistry, Metallurgy, Dental Anatomy and Physiology, Dental Materia Medica and Therapeutics, Dental Pathology and Bacteriology, Orthodontia, Oral Surgery, Operative Dentistry (theoretical), Prosthetic Dentistry (theoretical), Practical Operative Dentistry and Practical Prosthetic Dentistry. An average of 75 per cent. will be required in each subject for theoretical branches, and 85 per cent. for practical subjects. This standard, and the personality of the Examining Board insures good service to the soldiers, and will fairly test the necessity for such service.—*Dental Register*.

AN excellent agent for the removal of substances between the teeth is a strip of rubber. This being thin, will pass between teeth which are in very close contact, and if the strip is broad will wipe off deposits and remove foreign material much more effectively than floss silk. It is the difference between cleansing a surface with a thread and with a cloth.—“LITCH,” in the *Dental Brief*.

IF the teeth came together so that there would be no motion, there would be comparatively little pyorrhea. When the occlusal surfaces are such that there must be a slight adjustment of the position of the teeth every time the mouth is closed, the slight movement constantly repeated causes inflammation and a series of disturbances which develop the disease.—G. V. I. BROWN.

Dominion Dental Journal

VOL. XIII.

TORONTO, JULY, 1901.

No. 7.

Original Communications

PROSTHESIS OF PART OF THE INFERIOR MAXILLA.

BY J. B. WILLMOTT, L.D.S., D.D.S., TORONTO.

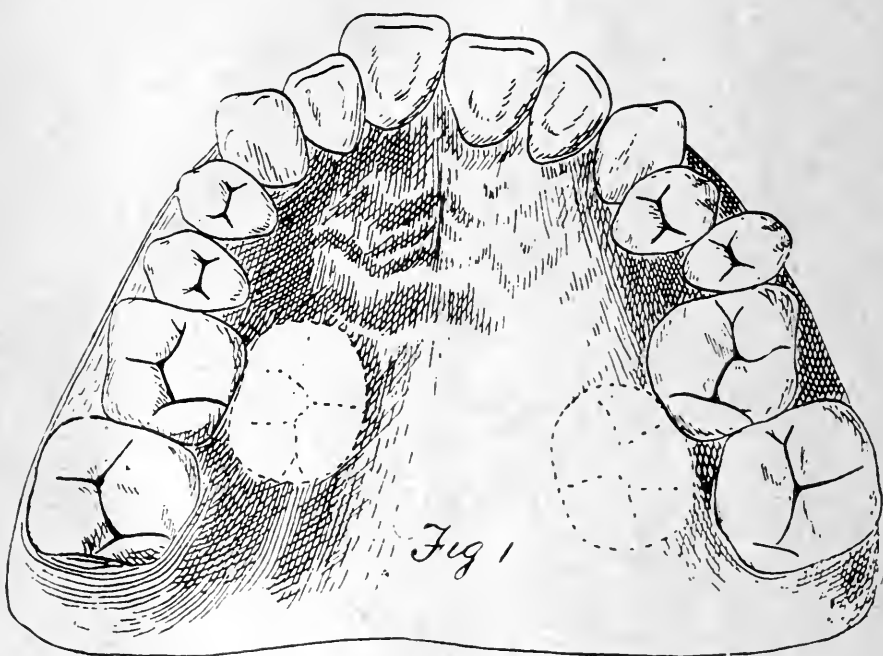
(Illustrations by M. GARVIN.)

Read before the Toronto Dental Society, May 14th, 1901.

A somewhat unusual case in prosthetic practice is my excuse for appearing before you to-night. The patient is an apparently healthy and robust young man about twenty-five years of age. Somewhat over two years ago, when playing football, he received a blow on the lower jaw which, while severe, did not give him much inconvenience at the time. Shortly afterwards he suffered from a serious attack of typhoid fever, as a sequel to which was developed, in the region of the injury, disease of the inferior maxilla. The character of this disease does not appear to have been clearly explained to the patient. After some months an incision was made and some diseased bone removed. The trouble, however, continued to develop, the teeth in the anterior part of the maxilla became loose, and while but little pain was experienced, a large part of the bone was diseased. On consulting an experienced surgeon, removal of the anterior portion of the inferior maxilla was advised. This operation was performed, cutting through the body of the bone in front of the

second molar on the right side, and in front of the third molar on the left side; and the bone anterior to these sections was removed. This operation was skilfully performed, and when he called on me, less than four months afterwards, the parts were thoroughly healed, showing much less deformity than one would expect. No provision had been made at the time of the operation for retaining the stumps of the jaw in a normal relation to each other.

The contraction of the tissues had drawn the free ends of



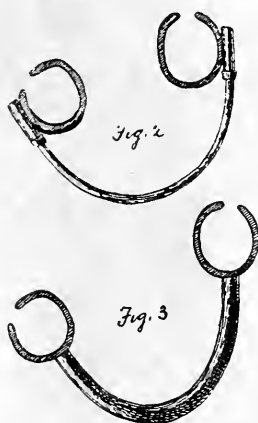
the bones toward the median line, while the action of the muscles had been to throw the jaw forward, and turn the base outward and the teeth inward until they occluded entirely inside the molars of the upper jaw, as shown in cut No 1.

A further examination showed that the free ends of the bone were quite mobile, entirely independent of each other. The lower lip was drawn backward and fell inside the upper teeth. The space between the lower molars was much too narrow to comfortably accommodate the tongue. This, with the retracted lower lip, made articulation difficult and indistinct.

Whatever might be decided upon as to the restorative appli-

ance, it was clear that the first step would be to restore the lower molars, as nearly as possible, to their original relation to the upper molars.

To accomplish this an appliance was devised (see cut No. 2) which consisted of heavy clasps fitted around the molars; on the outer surface of these were soldered short tubes closed at the distal ends. Into these tubes were slipped the ends of an elastic bow, made of hard-drawn German silver. Every day this bow was slightly widened, until in about fifteen days the stumps of the maxilla were proximately in their normal position. To make the fixture more rigid to hold them in place until the soft tissues became adapted to the changed position of the bones, the bow was soldered into the tubes. Now developed the first serious



difficulty. The movement of the free ends of the bone, entirely independent of each other, would work the clasp off one or other of the teeth.

A close observation of this movement convinced me that a fixed appliance, or bridge, attached to caps cemented on the molars, would be a failure; either the caps would be loosened, or what was more probable, the teeth would be loosened in their sockets. It was decided, therefore, to construct an appliance, attached by clasps to the teeth, so that there could be a slight movement of each tooth in the clasp which surrounded it.

The first step was to construct a strong metal frame, including heavy gold clasps nicely fitted to the molars (see cut. No. 3). This was placed in position, and softened impression compound moulded round the bar so as to force the soft tissues out to the normal contour.

This impression was trimmed to the desired form, moulded in an ordinary flask, and reproduced in black vulcanite. When this was polished, we had what might be regarded as the "artificial jaw," and this was worn for a few days to test its adaptation and its suitability for the purpose in view. The only difficulty was the tendency of the clasps to work off the teeth. As prolonged consideration did not suggest any method of overcoming this, we proceeded to attach eleven teeth to the "jaw," articulating them accurately to the upper teeth, using for greater convenience of arrangement plain teeth. This completed appliance, of which three views are shown in cut No. 4, was worn for a week or two to test it. To my satisfaction, and to the great satisfaction of the patient, it was found that the tendency of the

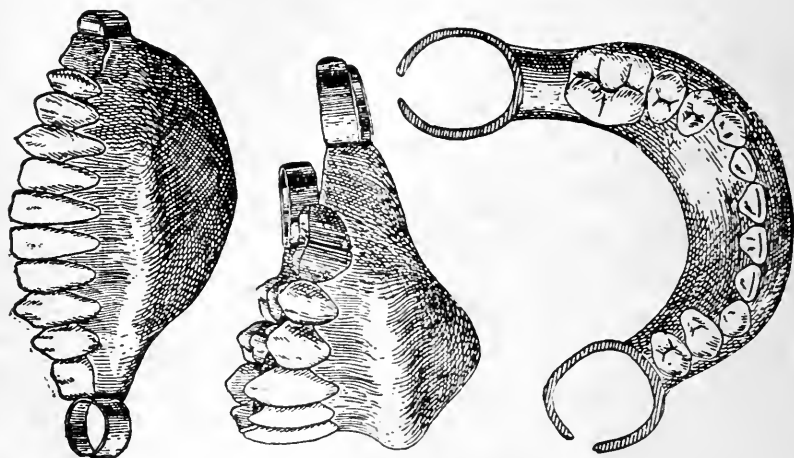


FIG. 4.

clasps to "work off," gradually lessened, so that at the expiration of a month not much inconvenience was experienced. The lower lip became more mobile, and covered the artificial teeth better, greatly improving the expression and articulation, so that no deformity is now apparent.

A duplicate appliance was similarly constructed, except that the impression was taken in plaster, without, however, securing any advantage, and gum section teeth were used. The operations were completed by making a heavy metal frame without teeth, to be worn at night, so as to relieve the molars from the strain necessarily placed upon them when the complete appliance is in position (see cut No. 3).

While no language can describe adequately the loss which

this young man has sustained, and while he must suffer life-long inconvenience and discomfort, it is very satisfactory to know that the resources of modern dentistry have been sufficient to so far restore his loss and overcome his misfortune that he may mix with his fellows and enjoy the familiar intercourse of social life, without so much as a suspicion on the part of other than his personal friends that he had been the victim of so dire a disaster.

In the chance that this article may come under the eye of a surgeon, who at some time in his career may be called upon to perform a similar operation, I may add, that if a simple appliance—that shown in Figure 3 would answer admirably—had been prepared before the operation, and put in place after, the difficulty of devising an appliance to replace the lost bone would have been greatly lessened, and a mal-occlusion of the molars, which cannot now be remedied, would have been avoided.

LECTURES ON CROWN AND BRIDGE-WORK.

BY F. J. CAPON, D.D.S., L.D.S., M.D.S., TORONTO.

Delivered before the District Dental Convention, held at London, Toronto and Ottawa.

In beginning this special study, or branch of dentistry, it is well to give a glance into its origin, and the preliminary treatment of teeth and roots, rather than plunge into practical demonstrations; for the secret of success in this special branch, is knowing where to use it and when the foundations are worthy and ready to receive it.

I will not go into the history and origin of bridging, as no one can speak with certainty of its first days, for it is shrouded in the mists of antiquity. Early operations of dentistry were limited to the extraction of offending teeth and the replacement of those which had been lost, by bridging the vacant spaces with substitutes, supported in position by means of their attachment to adjoining or intervening natural teeth; this is of early origin, having been practised long before the artificial plates came into use. Crude as they were, they formed the first expression of the art of bridging, a beneficent art from the beginning, in that it sought to restore pathological or accidental defects.

In the history of all progress, movements apparently of a more or less reactionary character are recorded. In the useful

arts especially it is not uncommon to find a return to form and methods formerly used but long since discarded and forgotten. So in dentistry we find methods of treatment and modes of practice once in vogue, but long fallen into disuse, renewed with improvements and modifications which stamp them as practically rediscoveries.

These movements are not to be regarded as retrogressive, because the modifications which accompany the reintroductions of practical ideas and inventions stamp them as real advances, and indicate clearly that the cycle of knowledge is ever widening with experience.

In this short course of lectures I will endeavor to show how modern dentistry has utilized the principle of some of the simplest original operations, and by "proving all things, holding fast that which is good," you will soon find yourself a capable operator, worthy of any operation that may present itself. Yet I must say, skill in dental operations is not so much in the material or the instruments used as in the ability of the operator to combine hand and mind.

A dentist is born just as much as an orator. Unless he is born with faculties that he can cultivate and which will enable him to become proficient; unless he is born with powers that will develop a fine mechanical skill, he will never be what I should call a first-class operator or bridge-worker, though his manual training may be the best that can be given, he must have a base to build it on, and that he gets at his birth.

If he has natural qualities to be a dentist, he will educate himself to make mind and hand work together, and will not have much trouble to become proficient in any branch.

Crown and bridge-work belong to the department of dentistry until recently termed "mechanical," more properly prosthetic; but the judgment, skill and scientific information required placed it far above ordinary mechanical dentistry, which has sunk to a low estate since the introduction of vulcanite. To such an extent has vulcanite, by reason of its cheapness and ease of manipulation, superseded other materials, demanding greater knowledge and skill in their manipulation, as to retard the higher development of prosthetic dentistry, and indeed, to divest it (in the hands of those who depend upon the former) of the dignity which should belong to dentistry as a profession.

But modern crown-work properly understood and properly performed takes high rank in dental art, and offers wide scope for versatility of talent and inventive genius. The varied and complicated cases presenting for treatment frequently suggest to

the expert novel contrivances and methods of construction and application. A man to be successful in this or any dental operation should be thorough in the extreme, have perfect candor, and should not lack sound judgment.

The interest of the patient should be paramount to every other consideration, and after a careful examination, they should be given an accurate statement of the applicability of the system to their case, in respect to the usefulness, appearance, durability and comfort, as compared with other processes and appliances in use.

In no department in our profession has progress been more noticeable than in this branch of prosthesis; in fact, the credit is due to it for the advancement and standing of our profession to-day; if we review the past twenty years we find that gold and amalgam and other plastics were used pretty much as they are to-day, thus we find dental surgery and crowning the advancing factors. So it has made its place and it has come to stay, fulfilling requirements that had not been met by any other methods that preceded it, in that it often afforded a satisfactory means of artificial replacement without the objectionable accompaniment of a plate, and will henceforth be regarded as one of the accepted procedures in dental prosthesis.

Unfortunately, however, like many other innovations, the method has suffered from abuse, so that its promised blessings have almost been converted into a curse.

Practised at first by men who, recognizing its adherent advantages, brought to its development skill, good judgment, and honesty of purpose, it had no sooner found favor with the public than it was seized upon by a horde of unskilful and unscrupulous practitioners, who use or rather abuse it, by making it minister to their avarice alone.

It is indeed lamentable that this most valuable method of replacement, with possibilities for greatly benefiting mankind in general, should have been found of such abuse as to bring discredit upon the profession, where only benefit had been expected and desired.

Crown-work is inherently a combination of mechanical and surgical procedures, and requires for its performance the best treatment in both of these lines.

It is through lack of appreciation of this fact that failure has often followed honest endeavor, while absolute disregard of it on the part of the charlatan has too often been the means of inflicting positive injury.

In simple crown-work, the object is to restore to usefulness broken-down crowns and roots of teeth; and whether it is to be

accomplished by encasing the remainder of the crown, or mounting upon its roots a hollow metal shell, as in the case of posterior teeth, or similarly restoring the anterior ones with porcelain or combined porcelain and metal crowns, the surgical features of the case demands that the crown or root to be operated upon shall be reasonably firm in its sockets, that it be free from either present or prospective pathological conditions, and that the investing membrane be not injured by the operation.

The mechanical and esthetical features to be considered are that the proposed artificial crown shall be harmonious in appearance with the remaining teeth; that it shall be the same size and form as that of the lost crown; that its adaptation to the root be as perfect as possible; that its retention be secured by a medium of the greatest durability, and that if any portion of the crown or its adjuncts extend below the free margin of the gum they shall not imping upon or irritate the pericemental membrane. A crown constructed and mounted in conformity with these requirements is the "ideal" in this class of work, and yet how seldom do we find this ideal realized.

To-day, through the length and breadth of this land, and in other countries as well, thousands of crowns are being placed that do not conform to one-half of these requirements.

Inharmonious in their surroundings, poorly constructed, ill-shaped and ill-fitting, receptacles at their borders for all that is vile and unclean, their only claim to tolerance being that they for a time keep their places and in some measure assist in mastication; they confront us continually, not only in our offices, but in the streets and public conveyances, filling us with mortification over the prostitution of a noble method to base ends.

In bridge-work, the same requirements hold as in crown-work, but they are supplemented by others, owing to the more extensive character of the work and the increased difficulties attending it.

Bridge-work should be simply extended crown-work, and such it is when properly employed; but when carried beyond its proper limits, or when it is attempted in cases where it is contraindicated, a multitude of evils result.

The adjusting of two crowns to roots favorably situated to serve as piers or buttments involves no more difficulties than the mounting of a single crown upon a single root, whilst the construction and attachment of the intervening crowns or dummies demand principally mechanical skill and esthetic taste; but what may be a simple and proper procedure in a favorable case be-

comes a very complex and doubtful one where too much is attempted.

Blinded by the success that attended the earlier efforts of conscientious practitioners in this line of work, too many of the rank and file of the profession, overestimating its possibilities, eagerly adopted it as a panacea for all the ills of plate-work, and a ready means of increasing their practices and "incomes." Failing to realize its limitations of usefulness, it has been employed in promiscuous cases, roots that were loose and lost the support of their investments through disease, have been used as piers for bridges, sound teeth have been ground and mutilated out of all resemblance to their former shapes; for the same purpose pulps have been ruthlessly sacrificed in order that foundations might be served for a proposed bridge; and worse than all, and more inexcusable, two sound and valuable teeth have often been hopelessly disfigured and injured in order that they might be used to support a single dummy tooth.

In other cases, diseased crowns and roots have been covered without previous treatment or disinfection; the sides of roots have been perforated by the drill in enlarging the canals to accommodate the dowels or posts; remains of crowns and margins of roots have not been trimmed to proper shape, so that the bands or caps, when placed upon them, stood out at their edges, a constant source of irritation to the surrounding soft tissues, favoring the deposit of debris and inviting the decay that is sure to follow; a few teeth and roots have been made to serve as a support for a full complement of crowns, and pieces of greater or less extent have been so rudely constructed and placed under unfavorable conditions that the wearers have only been relieved of their discomfort by the removal of the structure.

Therefore it is clearly evident that surgical and mechanical operations of the most delicate nature are required. Nothing, indeed, in dentistry demands finer or more accurate manipulation, as well as artistic skill for the correct treatment of cases, and the proper performance of the operation indicated. Among the principal steps in an operation may be named:

1st. The preparatory treatment of the natural teeth and roots for the final process, involving the diagnosis of present and probable lesions, and prescriptions of whatever remedial or prophylactic measures may be needful.

2nd. In crown-work the adaption of artificial crowns to the cervical portion of the natural roots and the contiguous membranes, and the restoration of the articulation, and the anatomical contour; and in bridge-work the selection of suitable teeth or

roots for foundation piers or abutments, and the choice and adaptation in constructive practice of the forms which will insure the highest degree of stability and best sustain the force of occlusion, thereby avoiding abnormal positions and conditions.

The practice of crown-work by those possessing the requisite attainments, and governed by correct ethical principles, give results which will establish its value, remove the erroneous impressions I have made mention of, and insure a wide professional and public endorsement of this important branch. Its extraordinary facilities for preserving and replacing teeth are gradually making the position in dental art which it merits.

Preparatory treatment of teeth and roots for crown-work includes (in addition to the shaping required to fit them for the reception of the crowns), the bringing about of the healthiest possible condition, not only in the teeth and roots, but the adjacent parts, as the cure of existing lesions, the removal of salivary calculus where necessary, and the adoption of such measures as shall prevent the recurrence of old trouble or the inception of new.

Notwithstanding all that advanced knowledge of therapeutical agents and skill in their use permit, there are many teeth and roots which cannot be rendered suitable for the successful application of crowns and bridges.

Roots which are permeated and softened by decay, exposed or loosened by absorption of the gums and alveoli, or affected with irremediable disease of the investing membranes, should be thus classed. Cases in which abscess with necrosis has extremely impaired the walls of the alveoli are equally intractable.

Experience shows that the results in this special branch depends largely upon diathesis or constitutional tendency, and upon the attention to preserve the health of the mouth; and these conditions should be carefully estimated in the selection of a system of treatment and the methods of its application.

Ordinarily, bridge-work is immovably cemented in position, the claims set up in its favor are as follows:

- 1st. The absence of any mechanical contrivance to interfere with the tongue in articulation.

- 2nd. The perfect replacement of lost teeth by artificial ones, and without the use of a plate.

- 3rd. The natural ones are not abraded by the presence of clasps.

- 4th. The functions of the sense of taste are most perfectly performed, and a healthy condition of the tissues preserved, because the gums and palate are not covered with a plate.

5th. The solidity and immovability of the denture at all times both in speech and mastication.

6th. The weight of the denture and the strain of mastication are proportionately distributed on the natural teeth, are better suited than the contiguous alveolar surfaces.

7th. Its special adaptation to the replacement of single or of a small number, where bridge-work is usually superior to any other device.

8. While all operations performed for the restoration of lost teeth, like remedial operations, are temporary rather than permanent in their results, bridge-work as regards permanency takes equal rank with any other operative procedure.

The following, on the other hand, are the objections raised against bridge-work:

1st. It fails to restore the contour of the soft tissues above the bridge, as artificial gums cannot properly be used in this style of work.

2nd. The slots bevelled under the artificial teeth, called self-cleansing spaces, fill with particles of food.

3rd. The speech of the wearer is often affected by these self-cleansing slots under the front teeth.

4th. The teeth employed as abutments are very often irreparably destroyed by the process of crowning.

5th. If an extensive bridge is made of gold, being immovable, it is impossible to keep it perfectly clean, as the metal will gradually tarnish in parts out of the reach of the brush, and will gather offensive matter on its surface and in its interstices.

6th. In cases where it becomes necessary to temporarily remove the bridge for the purpose of repair, or because of disease in the teeth which support it, the operation is often difficult and the bridge is usually injured so as to unfit it for reinsertion.

7th. The teeth which support the bridge are required to bear more force and pressure than nature intended—where the piece is large, many times more—and the bridge, being permanent, at no time can any rest be given the abutments or the contiguous parts by its temporary removal. Thus in a piece of bridge-work of fourteen teeth, supported by caps and crowns on four natural ones, each one of the natural teeth may have to bear more than three times the strain in supporting the weight of the denture and the force of mastication, than was intended. The ultimate result is evident to any one who has experience in dental practice; and unless the anatomical conditions are most favorable, the usefulness and durability of such work is decidedly limited

in character, considering the time, trouble, and great expense attending it.

Now, after hearing this array of charges against the subject we are about to enter upon, leaves rather a grim outlook for one to surmount.

I have made the bright light shine on this side of the subject, that it will reflect the possible failures, as the fair fame of dentistry has been tarnished and only time and improved methods of practice can restore to her the position she has temporarily lost.

Failures, like curses, "come home to roost," many having arrived, and legions more are on the way. We know of no better teacher than experience, and many of those who embraced the new methods at its most promising period with all the ardor of a first love, are now beginning to realize that discretion is a safer guide than enthusiasm.

FULL REQUIREMENTS OF AN ARTIFICIAL CROWN.

It should, as nearly as possible, restore the appearance and function of a natural tooth.

A crown must rest firmly upon the face of the root upon which it is placed. The contact must be at all points of the edge of a crown with a tooth surface. If of porcelain, it must correspond in size, shade, and position with its fellow, and must subserve its purpose in mastication.

There should be at no part any projection which can form part of a pocket, nor any point that can act as an irritant to vital tissue. The line of junction between tooth and crown should be clean and clear, so that neither the surface of the root projects beyond the edge of the crown, nor the edge of the crown beyond that of the root.

If a barrel or collar crown, the upper edge of the collar must be in close contact with the root surface. It should extend far enough beneath the margin of the gum to grasp the root firmly, but should not extend to the alveolar border; let the collar represent or replace the upper border of enamel; it should not extend much beyond the depth of enamel line unless the gum has receded from the tooth.

For posterior teeth the details as to the size and contour are equally important, and in addition their articulating surfaces should have such an arrangement of cusps and sulci that the normal mastication is restored.

1. The first example of crown substitution, mounted according to the principles of crowning, was the setting of a natural crown (taken from some poor victim) upon a natural root.

2. Hickory peg as a dowel and a porcelain crown.

3. Metallic post was substituted.

All varieties of crowns
are divided into two
great classes.

1. Those anchored by post in
enlarged canals:

Logan
Post and Plate
Richmond
Davis, etc.

1. Those in which the post is
a part of the artificial
crown, being baked in or
soldered to it:

Logan
Brown
Post and Plate, etc.

2. Those in which the post is
anchored in pulp canal,
as a primary means, and
upon this support the
crown itself is fixed:

Tube
How
Bonwill
Gates
Foster

2. Those which have their
retention secured by a
continuous band encircling
the neck of the root:

Gold Cap
Jacket
Cup

All the artificial crowns in present use will be found to be a variety or some modification of one of these classes.

Each variety is designed and fitted to meet definite indications, and the application and choice of variety are determined by the anatomical, physiological, and pathological conditions of the root to be crowned and, it may be, of the surrounding parts.

(To be continued.)

DAVIS CROWN.

BY DR. W. E. WILLMOTT, TORONTO, CAN.

Read before the Toronto Dental Society, March 12th, 1901.

I have been requested by the president to present to you this evening for discussion the Davis Crown. This is one of those porcelain crowns in which the pin is entirely separate from the crown. (Described the crown from drawing on blackboard.) At our last meeting the Logan crown was presented, and in the discussion one member condemned it on account of the pulling away of the pin from the porcelain in the centre of the crown, due to the

contraction of the metal while cooling. This objection cannot hold with the Davis crown.

"Every dentist knows of the difficulties incident to making a perfect fit of a porcelain crown to a natural root when the pin is baked into the crown. No matter how careful he may be in grinding up the crown for the case in hand the pin is always in the way to prevent that accuracy in the adaptation of the crown necessary for the best results. With the Davis crown the pin is an afterthought. The crown can be handled in every convenient manner. You can grind it in any direction, and a perfect fit can be made in half the time, as with one of those furnished with the pin fastened in. Then, after the crown is ground to fit the root, the pin can be set and cemented in any position required."

How often we see a porcelain crown inclined forward, due to the bending of the pin. This danger is, to a great extent, overcome by the concave shoulder on the pin in the Davis crown. Also when the pin is not baked into the crown a stiffer and stronger pin than platinum can be used. And on account of its being stronger and stiffer a smaller pin may be used, thus avoiding enlarging the root canal very much and thus weakening the root. Another advantage of this crown is that if it is necessary to grind the face of the porcelain it can be polished again almost equal to its original appearance. Considerable exception has been taken to any crown where the root is not protected, as with a cap and band. It is a very simple matter to band a Davis. Make the cap and band as usual and pass the pin through till the shoulder rests on the cap and solder, then cement the crown to the pin. The great advantage claimed for the Davis, however, is the ease with which a broken crown may be replaced. In the other forms the pin has to be removed from the root, which is often a very difficult operation, and which weakens the root, but in this case we have only to select another crown, grind to fit root, and cement in place as at first.

Referring again to the discussion on the Logan crown at the last meeting, one member insisted on combatting the idea, which had never been even hinted at, that the Logan was suitable for every case. Now in case some one should waste the time of this meeting repeating this criticism I wish it distinctly understood that while I consider the Davis the most convenient, and for many cases the best porcelain crown on the market, I do not claim it has a universal application.

Selections.



THE BUST OF DR. BARRETT.

One of the pleasantest incidents of the late commencement exercises of the Dental Department of the University occurred at the alumni banquet on the evening of Commencement Day. It was a surprise, too, for nearly every one present. Last winter the Dean, Dr. W. C. Barrett, was called upon to go to Toronto to deliver a lecture before the Royal Dental Society. While speaking, Dr. Charles E. Pearson, a young dentist of Toronto of unusual artistic ability, busied himself with making sketches of Dr. Barrett, without attracting the observation of the others. He succeeded so well that the idea seized him to model a bust from his drawings. Through a friend he obtained a photograph

from another point of view and went to work. The result is shown in the cut of the bust from a photograph made from it.

It appears to us that, the circumstances being considered, it is an extraordinary production. It was the first attempt of Dr. Pearson to produce a work of the kind. He never had a sitting from the subject, and yet all agree that it is a strong likeness, while from the artistic standpoint it is a most decided success. At the banquet it was placed on a high mantelpiece behind the principal table, of course being covered. Dr. Pearson was called upon to speak to the toast, "Our Brethren across the Border," and at the close of his address he unveiled the bust and presented it to the College, greatly to the surprise of the large number at the tables. It need not be said that it created great enthusiasm. All arose and greeted it with long continued applause. Prof. Snow, in a few neat remarks, accepted it on the part of the college, after which there were loud calls for Prof. Barrett. For about the first time in his life, we think, Dr. Barrett was unable to give expression to his thoughts.

After a time, however, he managed to thank all concerned, and to express his great appreciation of the gift of Dr. Pearson, and the way in which it had been received. We think all will agree with us that the bust is a beautiful one, and that the artist has very happily caught the expression of the subject in one of his many changing moods. The college will highly prize it as a most acceptable gift, and the Alumni Association heartily join in thanking Dr. Pearson for this magnificent work of art.—*College Forum.*

ARTISTIC DENTURES.

BY EDWARD A. ROYCE, D.D.S., CHICAGO, ILL.

Read before the Odontological Society, Chicago, Ill.

Selecting the proper shades of porcelain teeth is one of the most important features of prosthodontia, and one in which our most skilful dentists signally fail. The efforts to imitate in our dentures the harmony of shading found in the natural teeth, have been so inadequate as to be of very little practical value, in fact, most of the dentures are made up without the least regard for the artistic work done by nature in inserting teeth of so many varying shades in every mouth. I have watched with much interest and gratification the improvement in the prosthetic department of dentistry, and it has been with especial interest that the growth and perfection of the use of porcelain has been witnessed. From time to time the attention of the profession

has been called to the very inartistic effects produced by the crowns, bridges, and dentures of to-day, and I had hoped that some one more able than I would point out a way to remedy (in a large degree) this very grave defect in what should be the most artistic of all productions, but others have done so little in this direction I wish to invite you to study the subject with me for a short time this evening.

If we wish to select the bits of porcelain that are to represent the lost dental organs in full upper and lower dentures, we find certain rules given in all standard works, which if followed, will indicate to us the style of tooth required for the case in hand. These directions are the result of careful study and much thought by some of the best men that have ever worked in prosthodontia, and are good so far as they go, but how many here present, after they have studied carefully the temperament of the patient and decided, probably correctly, as to the size, color and shape of the tooth indicated, are fully satisfied with the appearance of the dentures after they are placed in the mouth? The features may have been restored in the best possible manner, the teeth may have been selected correctly, according to the temperament, and they may have been properly articulated and occluded, but after all this they look like store teeth, say what you may. And even if, as advised by some, you have substituted darker cuspids than those in the set, you have relieved the very artificial appearance but little. This annoyed me for years, and I finally concluded that the fault was largely due to the sets of teeth as made up for us by the manufacturers, and all the changes that we make, like putting in fillings, or placing a dark tooth to represent a pulpless one, or any other art we might use to imitate the ravages of wear or disease, could not give the natural appearance to our artificial work so much desired, but that some radical change was needed in the teeth as a whole. In our dental literature we find records of casts and measurements that have been taken to the end that our teeth might be of the proper size and shape, but the varying shades of the natural teeth are nowhere spoken of, and becoming convinced of the importance of this feature I began the examination of mouths with the natural teeth in place to ascertain where in the shading of the artificial teeth differed from the natural.

In our study of this subject we must have some standard by which to measure the shade of each tooth, and for this standard the upper central incisors of the denture under consideration were always selected. Some means being necessary to convey to you the different shades of the teeth in the mouth, I selected o, or zero, to represent the shade of the central incisors, using numer-

als to express the other shades—the higher the numeral the darker being the shade. Of course it is readily seen that a shade as a measure may vary according to the eye of the observer, but study and observation will educate the eye so that the proper shades will be easily selected. I did not fully appreciate the influence the second bicuspid and molars had on the appearance of the denture as a whole, so at first I did not include them in my records, but in a few of the latter records I have given their shades, so you can see about how they compare with the other teeth. I excluded all mouths in which large fillings, dead pulps or other causes affected the shade of the teeth, and out of a very large number of mouths examined I present to you records of only about fifty; these were of all temperaments and all ages, from eight to seventy-two.

The youthful denture is always described as one of beautiful uniformity of color—a most misleading statement, which I will prove by the first case recorded, a child eight years of age; the only anterior teeth that had erupted were the central incisors. The superior incisor was taken as standard or 0, and upon comparison the lower central was found to be three shades darker than its antagonist. This shows at once that the variety of shades in the denture does not come from age, but is there from the time of eruption. The second case is of a child nine years old. The incisors were all in place, and in this mouth the upper lateral incisor was two shades darker than the central, which we take as standard, the lower central one and the lateral two shades darker. The age of the next was eleven, and the dentition had proceeded one step farther, as the cuspids were in place, and the record reads upper lateral two and cuspids three shades dark. The fourth case was fourteen years of age, and the bicuspid were erupted. In this case the upper laterals were three, cuspids eight, the first bicuspid eight shades dark; the lower centrals one, laterals three, cuspids seven, and bicuspid eight shades dark. Case five was sixteen years old, and the laterals were three, cuspids five, first bicuspid six, and the lower centrals two, laterals four, cuspids six, and first bicuspid six shades dark. These five cases are youthful dentures, in which the ravages of disease were not seen, and in which is produced in the greatest perfection the beautiful forms and coloring, than which nothing can be more artistic. Even in these perfect young mouths this great variety of shades is found.

Let us next look at case eighteen, twenty-two years of age. The record is lateral one, cuspid six, and first bicuspid five; lower central two, lateral two, cuspid five, and first bicuspid five shades

dark. Again case twenty-two has lateral four, cuspid eight, and first bicuspid five; lower central three, lateral four, cuspid seven, and first bicuspid five. A similar variation in shades of the standard color will be found in every case; even case forty-five, which shows a most remarkable preservation of the color and form of the teeth at seventy-two years of age. In this case the laterals were two, cuspids seven, first bicuspid eight; lower centrals one, laterals three, cuspids seven, and first bicuspid eight. The molars were included in the last three cases recorded, and they show positively that the molars, like all the other teeth, vary in shade from the upper incisors. This variation of shade is not in a dozen cases only, but I found only two cases in which there were other teeth in the mouth of the same shade as the upper central incisors.

Let us compare a set of teeth as furnished us by the manufacturers with one furnished by nature, and see how they agree. In the former set the shading would be represented by o, and would read central o, lateral o, cuspid o, first bicuspid o, second bicuspid o, and molars o—o; lower centrals, laterals, cuspids, bicuspid, molars, would all be represented by o. Compare this with case forty-nine of the record, central o, lateral two, cuspid seven, first bicuspid five, second bicuspid four, molars four; lower central two, lateral four, cuspid seven, first bicuspid six, second bicuspid five, and molars four. When you note the difference in the shading of the two cases do you wonder our artificial teeth look so unnatural?

The observations recorded in the table which I present to you prove that it requires teeth five or six different shades to make up a natural denture, either upper or lower. The upper centrals are the lightest, the upper laterals are one to three shades darker, the cuspids three to nine shades darker, and are usually the darkest teeth in the mouth; back of them the teeth gradually grow lighter, but are never as light as the centrals. The same general order of shading holds good for the lower teeth; the centrals are the lightest, but are from one to three shades darker than the upper centrals, the laterals are darker than the lower centrals, and the cuspids are again usually the darkest, the shades growing lighter as we proceed back from the cuspid. The ghastly appearance of the ordinary denture is due to the monotonous shading of the teeth used, and in no possible manner can we obtain a natural life-like appearance except to produce in our dentures the same variety of shades that we find in the natural teeth. The foundation of the artistic denture should be an imitation of nature in its normal condition; the changes incident to age or disease are readily made, so that the appearance of the patient to herself and

her friends is natural, and what would be expected and appropriate for her age, be she twenty or seventy-two.

The same lack of artistic knowledge is shown in shading the teeth in crown and bridge-work as in our dentures, and the

Number.	Age.	Upper Central Incisor.	Lateral.	Cuspid.	First Bicusp.	Second Bicusp.	Molars.	Lower Central Incisor.	Lateral.	Cuspid.	First Bicusp.	Second Bicusp.	Molars.
1	8	..	2	..	..	..	..	3	..	..	..	..	..
2	9	..	2	..	..	..	..	1	1	..	..	..	..
3	11	..	2	3	..	..	..	1	2	3	..	..	..
4	14	..	3	8	8	..	..	1	3	8	..	..	..
5	16	..	3	5	6	..	..	2	4	6	6	..	..
6	16	..	2	6	5	..	..	3	3	5	4	..	..
7	18	..	1	4	5	..	..	3	3	4	4	..	..
8	18	..	2	5	5	..	..	3	3	6	5	..	..
9	18	..	1	3	3	..	..	1	2	3	2	..	..
10	20	..	1	4	3	..	..	0	1	3	3	..	..
11	20	..	1	4	3	..	..	2	2	4	3	..	..
12	20	..	2	5	5	..	..	2	4	8	6	..	..
13	21	..	2	6	3	..	..	2	2	4	3	..	..
14	21	..	1	4	3	..	..	1	1	3	2	..	..
15	23	..	3	6	4	..	..	2	3	6	4	..	..
16	22	..	1	6	5	..	..	2	2	6	6	..	..
17	22	..	2	6	5	..	..	1	3	5	4	..	..
18	22	..	1	6	5	..	..	2	2	5	5	..	..
19	22	..	2	6	5	..	..	3	4	7	5	..	..
20	22	..	2	5	5	..	..	1	1	3	3	..	..
21	23	..	1	6	3	..	..	1	2	4	3	..	..
22	24	..	4	8	5	..	..	3	4	7	5	..	..
23	24	..	1	5	3	..	..	1	2	4	3	..	..
24	24	..	2	7	6	..	..	3	3	6	5	..	..
25	25	..	2	5	4	..	..	3	3	5	5	..	..
26	26	..	1	6	4	..	..	2	2	5	4	..	..
27	26	..	1	6	6	..	..	2	3	6	6	..	..
28	28	..	2	7	6	..	..	3	4	6	5	..	..
29	28	..	2	4	5	..	..	2	2	4	5	..	..
30	28	..	1	4	6	..	..	1	2	6	6	..	..
31	28	..	1	5	4	..	..	1	2	3	4	..	..
32	29	..	1	3	2	..	..	0	0	3	3	..	..
33	30	..	3	7	5	..	..	2	3	6	4	..	..
34	30	..	1	6	5	..	..	2	3	5	5	..	..
35	33	..	3	8	4	..	..	1	1	5	4	..	..
36	35	..	2	8	6	..	..	2	2	7	6	..	..
37	35	..	2	6	7	..	..	2	3	7	8	..	..
38	35	..	2	7	4	..	..	1	3	6	5	..	..
39	38	..	1	8	5	..	..	2	3	7	7	..	..
40	39	..	3	7	6	..	..	1	2	5	6	..	..
41	40	..	2	6	5	..	..	2	3	5	5	..	..
42	50	..	1	5	5	..	..	1	3	5	4	..	..
43	50	..	2	6	5	..	..	1	3	6	5	..	..
44	70	..	1	7	7	..	..	2	3	8	8	..	..
45	72	..	2	7	8	..	..	1	3	7	8	..	..
46	25	..	2	7	4	..	..	4	5	6	4	..	..
47	20	..	2	8	3	4	4	2	3	7	8	8	4
48	30	..	3	7	5	4	4	1	2	7	6	5	4
49	30	..	2	7	5	4	4	2	4	7	6	5	4
50	19	..	1	8	3	4	4	2	3	7	8	8	5
51	23	..	3	8	6	5	4	2	6	8	6	4	4
52	24	..	1	8	6	5	4	2	3	7	5	3	2

unsightly appearance of these teeth often mar what would otherwise be a beautiful piece of work. The same necessity exists for proper shading here as in dentures, and the natural appearance of the mouth when the teeth are properly selected is one of the principal differences between ordinary laboratory work and the

product of the trained artistic dentist. I believe teeth can be arranged in classes so that an average shading for each temperament could be made, which would be a guide to help us in making up our sets of teeth. I understand there might be some difficulty in manufacturing sets of teeth shaded up in this manner, because of the uncertainty of the color of the tooth after fusing, but if there is a demand for them the teeth will be supplied from some source. I fully appreciate the fact that there is opportunity for an almost endless amount of work on this subject, as the data which I present to you to-night has required the examination of some three hundred mouths, but during my study of this subject I became so impressed with its importance and it so grew upon me that I decided to place the results before you in this somewhat incomplete condition.

The object of this paper is not to tell you just what shade of tooth should be used for different cases, but to awaken in dentists a new interest in prosthetic dentistry, and especially in the artistic effects we can produce in our efforts to restore to faces their natural appearance. Art is to a large degree an unknown factor in the replacement of the dental organs, and if the dentists are ever to occupy the position which belongs to them as artists the present is the time to do so. There is a demand for the best efforts of the best men in our profession, and this demand will increase just as fast as we can demonstrate by our work that we are worthy of the name of artists.—*Dental Review*.

ULCER VS. ABSCESS.

BY W. C. BARRETT, M.D., D.D.S., LL.D., BUFFALO, N. Y.

There are few of the minor mistakes in dentistry more deeply to be deplored than the prevailing loose, inexact, unscholarly use of technical terms. A professional man is supposed to be precise in professional things. Indeed, that very definiteness should form a considerable proportion of his distinguishing characteristics. The layman is not supposed to be informed concerning professional definite terms, but when the man who has been specially trained to clearness of expression indulges in the slipshod language of the uneducated man, he produces a painful impression upon the mind of those better informed. A great deal of this is probably due to bad habits. Mingling with those who lack preciseness he picks up their ways of expression, and while possibly at first aware of his solecisms, in a little time he becomes accustomed to them, adopts them himself, loses his appreciation of correctness, and becomes careless in his methods of practice, as he is in his use of technical terms.

Worst of all, even teachers in our colleges sometimes set an evil example before students. They habitually misuse professional language until one is led seriously to doubt either their natural intelligence, or their professional knowledge. In their very lectures, intended to instruct, they convey misinformation. They constantly speak of the six-year-old molar and the twelve-year-old molar, as if the teeth in question were of that age. It would be quite as easy to refer to them as the first and second permanent molars, but six-year-old molar—the term is an absurdity. I have heard teachers of operative dentistry speak of the pulp of the tooth as the “nerve,” when with equal propriety they might call the finger or the tongue by the same term, because they also contain nerves. The root of the tooth is often spoken of as the “fang” and the alveolar walls as the “alveolus.”

Perhaps, however, the most inexcusable error that is commonly made is when either teacher, practitioner or student speaks of an abscess as an ulcer. Judging from the frequency of this stupid misuse of terms, one would be led to believe that dentists are, as a profession, so illiterate that they ought not to be trusted to cut a corn, much less to minister to serious diseased conditions. If they do not comprehend the difference between an abscess and an ulcer, really they are absolutely unfit to treat them, while if they do recognize the distinction, they are too careless in their methods to be successful practitioners.

It is probable that some students, at least, have not learned that which specially distinguishes each condition. Let me then point out the very marked differences between the two, and when this is done, if the reader has been in the very bad habit of using the one term for the other, let him firmly resolve to inaugurate a reform in himself, and henceforth not to be guilty of an impropriety of speech that should be indulged in only by those who know no better.

There never was such a thing as an “ulcerated” tooth. There can be no such condition. A white blackbird might exist, but an ulcerated tooth—never. In some countries the sun shines at midnight; but even in those distant regions there is no such thing as an ulcerated tooth, although alveolar abscesses may be common enough. An abscess is a circumscribed collection of pus within the tissues. It necessarily arises from infection, as do all pus pockets. Its progress is always from within outward. It invariably tends toward recovery. That is, an abscess is normally self-terminable. Continued irritation may cause it to assume a chronic condition, but this will be due to extraneous causes. Its natural termination is in the discharge of the pus

upon the surface. It is never distinctly degenerative in its action. When there shall have been elimination of the pus, the abscess is cured for the time being, or until another, or the same causes repeated, shall induce a new formation. It is always the result of some recent lesion or irritation, never arising from any old disturbance. It very seldom leaves a scar. In fact, it never does unless there is some complicating disturbance. As has already been intimated, its action is always from within outward.

An ulcer is the direct opposite of all this. Its beginning is invariably upon an epithelial surface and its tendency is toward the interior. That is, it is from without inward. It never, like an abscess, has its initial point beneath the surface, and its determination is always toward exacerbation. That is, it is degenerative in its very nature. An abscess, if left alone, proceeds from a bad to a better condition; an ulcer always from bad to worse. It is indicative of a generally depraved physical state, while an abscess is simply the result of a local irritation and infection. Hence the latter is not necessarily an indication of any special diathesis, or any general depression of physical tone, while the former always is.

An ulcer is never the result of any recent wound or lesion. It is always the result of a long train of deteriorating causes, a continued irritation of a special nature, that at last results in such a vicious state of tissues that they are powerless to maintain functional activity. There may, for instance, be some abrasion upon the external surface of the body, and this from some external or internal source, is kept in a constantly irritated condition which finally results in the loss of the usual reparative functional action, and retrogressive metamorphosis takes the place of that which is progressive. Instead of the infection and suppuration which is usually the result of an irritant beneath the skin or mucous membrane, there commences a cellular sloughing and erosion of the tissues from the surface, which as it proceeds toward the interior reduces the tone of the tissues in advance of its action, finally suspends their reparative functions and causes their sloughing, and thus eats its destructive way from one part to another, spreading and deepening in all directions.

An ulcer always leaves a scar which will be proportioned to the amount of destruction of the epithelial surface. Pus may accompany it, though it is not necessarily a part of the process. If it forms, it is because of the putrefaction of already functionless and devitalized tissues. It does not arise from infection of any plastic exudate that may be effused as the result of the inflammatory process. There is nothing like a pus socket, because no original lymph is poured out, the depraved and atonic condi-

tion having suspended the reparative process more or less completely. In an abscess there is a distinct period when the trouble is at its worst, and which, once passed, there succeeds a subsidence of the acute symptoms and state. An ulcer presents no such variation. There is a steady progression from bad to worse with no specially marked alternating periods.

It may thus be seen that we can scarcely imagine two more widely differing pathological conditions, and the man who confounds them, either in diagnosis or description, in comprehension or nomenclature, must either be woefully ignorant or almost criminally careless. In view of the almost universal interchange of the terms, I am not certain that this is a very prudent remark to make, but being made, it will have to stand. But henceforth the reader of this, if he be a careful student, can but smile when he hears any one—and, most of all, his teachers—speak of an “ulcerated tooth,” thereby meaning that condition of inflammation and suppuration of the pericementum which is sometimes so-called. That tissue and the point of infection is usually deep down beneath the surface. There is an infection and formation of a pus-socket which distinctly marks an abscess, it reaches to culminating point, the pus rots, and bores its way to the surface, when the acute stage is ended. This is precisely the opposite of all the conditions which distinguish an ulcer, and as the intelligent dentist cannot mistake the one for the other, he ought never to call the one by the name of the other.

INLAYS.

What I have to say on the subject of inlays is largely a reaffirmation of what I have said before. It has been said this evening that there is doubt as to whether inlays will last, and there is doubt. Even in the light of Dr. Johnson's experience, there is doubt whether gold will last. It depends largely on who does it, and how it is done. I think we have all had failures with porcelain fillings, and I think, with the exception of some enthusiasts, we have all had failures with gold fillings.

The chief point to be regarded in porcelain fillings, as in gold fillings, is to have sharp, hard polished edges, free from any possibility of being powdered. There was a gentleman in Philadelphia who did very good work. He was a teacher of some years' standing. One of his pupils came to him and asked, “How do you fill difficult cavities?” “I never have difficult cavities; I cut them away until they are easy,” he said. So, in porcelain work, many failures are due to not cutting away sufficiently. Gold fillings drop out and fail in many instances, because they are not suffi-

ently dovetailed and undercut, because they do not have sufficient substance to bear the strain; many porcelain inlays fail from a similar cause. The one thing most necessary for success in porcelain work is to prepare the cavity to fit the porcelain quite as much as the porcelain to fit the cavity, and if platinum is used, it is especially essential that there should be hard, sharp, polished edges. This can be accomplished easily with wet diamond burs or little Arkansas stones. If the interior of the cavity is formed so as to almost hold the porcelain filling itself, the preparation of the matrix and the packing of the material will be comparatively a minor detail.

What I have said on the subject of the high-fusing and low-fusing bodies, I can but reiterate. I saw Dr. Jenkins this summer in Paris, and we had a delightful time comparing methods. He does beautiful work, and his adaptation is beyond all criticism. I think he also saw that there were advantages in the high-fusing bodies that he had not before recognized. When I was making my matrix he confessed that as a perfect a matrix could be made with platinum as with gold, but declared that the result was due to the individual skill of the operator. This, while complimentary to me, was not fair to the method. I also noticed that Dr. Jenkins has been improving his porcelain nearly every year since he has made it, and I have heard a great many people declare that the porcelain does not last. I am perfectly well aware that if the Jenkins' porcelain is not properly fused it will not last. The high-fusing porcelain also, if not properly fused, will blacken and undergo changes in color. But I have yet to hear any one find fault with the high-fusing porcelain on account of deterioration in the mouth. If they do, they are accusing themselves, for the high-fusing body has been used in the mouth twenty or thirty years. While it might be possible for Dr. Jenkins to use his porcelain so that it would give permanent results, owing to his care and skill and precision, I have come to the opinion that in the hands of the average dentist, with the average skill that is required to make a good matrix of platinum, the high-fusing body will give better results than the low-fusing body. I have found no cement up to the present time better than the Harvard cement, but I wish to thank Dr. Jenkins for suggesting that the Harvard cement be ground finer than formerly.—*Dr. Head.*

THE NEW SCHOOL OF MEDICINE.

Address before American Medical Association by C. A. L. Reed.

The changes which I have advocated are essential for the attainment of the purposes of the association and for the fulfilment of the high destiny of our national profession. They are

demand by the changes that have taken place during the last fifty years. The legislative functions have passed from voluntary organizations to the Congress and the legislatures, where they belong; but it still devolves upon the profession in the organized capacity, to stimulate, to restrain, or otherwise to control the law-making power. The responsibility of the profession is increased, rather than diminished. Science has come to have a clearer meaning. He who now proclaims a dogma cries alone in the night, while the world sleeps. They who demand a creed may read its varying terms only in the progressive revelation of natural laws. Practice has changed. The depletions, the gross medications, the absurd attenuations, the ridiculous anti-mineralism have given way to a refined pharmacy and to a more rational therapy. Sacrificial surgery has yielded to the spirit of conservatism. Prevention is given precedence over cure. Education implies research and discovery, and all may delve. I proclaim, events proclaim, the existence of a new school of medicine. It is as distinct from the schools of fifty years ago as is the Christian dispensation from its Pagan antecedents. It is the product of convergent influences, of diverse antecedent origin. It acknowledges no distinctive title, it heralds no shibboleth. It is a school of human tolerance, of personal independence, of scientific honesty. It is the slave of neither prejudice nor preconception, and abandons the accepted truth of yesterday, if only it be the demonstrated error of to-day. It places no premium upon personal prerogative, and extends no recognition to individual authority. It makes no proclamation of completeness, no pretention to sufficiency. It recognizes that truth is undergoing progressive revelation, not ending to-day, but continuing through the ages. It yields its plaudits to achievement, and recognizes that he is the greatest among men who reveals the most of truth unto men. It greets as a friend him who thinks, though he think error, for, thinking, he may think truth and thereby add to the common fund. It heeds all things, examines all things, judges all things.

To you, the exponents of this new school, of this new generation, of this new century; to you, representatives of the Democracy of Science; to you, citizens of the Republic of Letters, I extend greetings; and here, in our parliament assembled, here, where our will is supreme, I this day invoke upon our deliberations the spirit of liberty, the spirit of courage, the spirit of progress, the spirit of truth.

Dominion Dental Journal

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No. 7.

LABORATORY TRAINING.

The University of Pennsylvania is about to erect a medical laboratory building, at a cost of \$500,000. The building is to be 340 feet by 200 feet, two stories high, with a basement. The whole building is to be devoted to the teaching of physiology, pharmacology, and pathology. There will be two large lecture rooms, each accommodating four hundred students. These lecture rooms are a semi-circular projection from the main building. There are two demonstration rooms, each to accommodate 185 students. The whole of the main building is divided into laboratories of different sizes to suit the different needs. The feature of the building, however, is the provision for forty original research rooms about fifteen feet by twenty, which will be fitted up for individual work.

What does all this expenditure of money on laboratories mean? Is the University of Pennsylvania going to experiment on methods of teaching for the benefit of education in general? Not at all; the laboratory method of teaching has been tested for years in both Germany and France, and is now gradually forcing itself

upon Great Britain and the United States. The Germans are great scientists, and are fast becoming great manufacturers, simply because they have been educated in a scientific manner. The most noted discoveries in modern medicine have been made in the laboratories of Germany. As a nation, the Germans are the leaders in scientific medicine. The state provides a living for its investigators, which in a large measure accounts for the advanced position of education in that country.

Reforms in education come but slowly. Universities and old established colleges have so many prejudices, customs and precedents to contend with that reform is well nigh impossible. There are to-day universities with an attendance of three thousand students without a single laboratory for teaching purposes. The more modern universities, not having the same difficulties to contend with as the older ones, are establishing laboratories. Public and high school teachers are far in advance of university teachers in this matter. They are so isolated that individual thought is necessary, and having been themselves educated under varying conditions, there is little of precedent to contend with as a body. The result of this was the recognition years ago of the principle that the only way to get scientific knowledge, and to learn the physical properties of substances, is by individual experience and observation, and that the only way to learn how to do anything is by doing it. In compliance with this principle, kindergartens were established, object lessons taught, and manual training schools equipped in connection with the public schools, while in high schools experimental, physical, chemical, mechanical, and designing laboratories were established. Public and high school teachers meet regularly to discuss methods of teaching, and the psychological principles underlying them. University and college teachers rarely, if ever, meet for such purposes, hence another reason for their backward methods of teaching. Dr. McLellan, principal of the Normal College, Hamilton, Ont., being asked if he knew if university professors ever met for the purpose of discussing methods of teaching, or if they received any special instruction to fit them for their work, replied that he knew of no such meetings, nor of such special instruction; it was his opinion that the consideration of methods of teaching is beneath the dignity of professors, and in fact "they believe they are heaven-born professors." In viewing its past and its present extensive proposed improvements, the University of Pennsylvania is surely not hampered by prejudices, customs, precedent, lack of money or energy, or a knowledge of the needs of the country on the part of the faculty or its management.

There is a growing tendency to make all education useful.

The only objection to this is the danger that the study of useful subjects of knowledge may not give the best mental training. This point has not yet been shown to be well taken. One of the best means of coming to a correct conclusion on a subject in a short time is to have thought about it several times, which is a much more direct means than by reasoning on an abstract subject that can never be of any practical value. To be a great surgeon, physician, or dentist, there must be a thorough training of the hand, the eye, and the mind. If the hand executes well, we know that the manual training has been thorough and also the mental, with perhaps the exception of the judgment, which may be defective.

Of what use is a surgeon or dentist if he cannot execute, or the physician if he cannot elicit the proper sounds in oscultation and interpret them. In the past there has been too great a tendency to give a memory training in medicine and surgery, without either a reasoning or manual training. Modern medical education is fast trekking away from the old regime by giving a thorough training in technic and observation by the laboratory method.

Dental education in America has always been based upon the principle of learn to do by doing. It perhaps was to the advantage of dentistry that the first colleges were independent of universities and medical colleges, which were at that time run on the non-laboratory plan. These institutions are now so rapidly conforming to the methods of teaching in vogue in dental schools that a university connection is sometimes an advantage because of the broader education given in such institutions. The American dentist has not gained his reputation because of his scholastic attainments, nor because of his scientific training, but because of his powers of observation and execution. These powers were not procured in the lecture halls, but were obtained from clinics, demonstrations, and work in the laboratories and infirmaries.

The tendency of modern education is undoubtedly in the direction of greater laboratory training. The Ontario Government is to erect a \$200,000 building in connection with the University of Toronto, to be devoted to the physical sciences. The Board of the R. C. D. S. of Ontario, at its last meeting, decided to extend its college building, to keep pace with the demands of modern dental education. At present there is a demand for more technic and mechanical laboratory space. The infirmary is too small. Laboratories for bacteriology and metallurgy are needed. Minor surgical and preparation rooms, examination and store rooms, museum and library, physical laboratory, physical diagnosis room, superintendent's office, and original research rooms, with others.

will be needed before five years are passed, and should be thought of in designing the new addition. In 1896, when the new building was erected, it was said, "What are you going to do with all the rooms?" Two years later a very much needed addition was erected. The accommodation is again found to be inadequate. This has occurred for several reasons, the chief of which are: 1st. The extension of the course to four years. 2nd. The broadening and extending of the course, which is found necessary because of more varied and increasing demands upon the dentist for a more thorough general and special education. 3rd. To provide for an increased attendance. The attendance has increased for several reasons: (a) the raising of the preliminary educational standard to that of the other learned professions; (b) increased demands for the dentist by the public; (c) the equipment and appointments of the college are so complete that attendance is a pleasure; (d) the high standard of education given is attracting students from all parts of the Dominion, who formerly went to a foreign country for their dental education; (e) the very excellent, energetic, and gentlemanly class of students in attendance.

The most valuable discoveries in dental science have been made in the laboratory, and it is from the same source that we may expect new departures in the future. This is so impressed upon the management of some of the dental colleges of the United States that they are equipping laboratories for original research much on the plan proposed by the medical department of the University of Pennsylvania. If colleges run as a joint stock company, and expected to pay dividends, have enough professional spirit about them to give up a part of their earnings for the advancement of dental science, surely such colleges as are owned, conducted, and controlled by the profession should not be found lacking in this regard. If the profession of Ontario would give its support to equipping two or three research rooms in the College, there isn't any doubt but there are many dentists who would be willing to give their time to such work, but cannot afford to give both time and the money to buy or rent and equip suitable rooms. There is so much that is unknown in dentistry that a concerted effort should be made to assist in its discovery. The conditions are better adapted for doing original work in Ontario than in any other country. The profession owns the college and controls its own affairs; there is an abundance of energetic, well educated professional men to do the work, and all that is needed is encouragement.

DENTAL REGULATIONS IN THE BRITISH ARMY AND THE MANNER IN WHICH THEY ARE CARRIED OUT IN CANADA.

The following letter from Ottawa shows under what conditions recruiting was done for the contingents and constabulary for South Africa:

Department of Militia and Defence.

OTTAWA, June 10th, 1901.

Sir,—I have the honor to acknowledge the receipt of your letter of the 5th instant, and beg to state that in the matter concerning the recruiting for South Africa the Department was guided by the rules and regulations of the British Army.

I have the honor to be, Sir,

Your obedient servant,

A. J. PINAULT, *Colonel.*

(*Deputy Minister of Militia and Defence.*)

A. E. WEBSTER, ESQ., M.D., D.D.S., L.D.S.
93 College Street, Toronto.

REQUIREMENTS.

Requirements of Her Majesty's Military Service as regards the teeth of candidates for commissions, issued by the Medical Department of the War Office, April, 1899:

The candidates' teeth to be in good order; loss or decay of ten teeth will be considered a disqualification.

Decayed teeth, if well filled, will be considered as sound.

Artificial teeth not recognized.

Requirements of Her Majesty's military service as regards the teeth of recruits, April, 1899:

That he possesses a sufficient number of sound teeth for efficient mastication.

The acceptance or rejection of a recruit on account of loss or decay of several teeth will depend upon the consideration of the relative position of those which are no longer effective: thus the loss of several teeth contiguous to each other in the one jaw, leaving none to oppose those in the other jaw, would be a cause for rejection, but not the loss of a similar number distributed between the two jaws and in different positions. Again, the loss of many teeth in a man of an indifferent constitution would point to rejection, while a thoroughly robust recruit who has lost an equal number might be accepted.

CONDITION OF TEETH.

The condition of a recruit's teeth who had passed the medical examination in Toronto before joining Baden Powell's constabulary:

Upper Molars.—There were only two present, one of which was too badly decayed to fill; the other had a cavity. The others were altogether wanting, with the exception of a couple of decayed roots left in the gums.

*Upper Bicuspid*s were wanting, with the exception of one on the left side, which was so badly decayed that it had to be devitalized, and the root of the other on the right side, which had to be crowned.

Upper Cuspids.—The one on the left side was decayed to the gum line and had to be crowned; the one on the right side had two cavities, mesial and distal.

Upper Incisors.—The two centrals had each two cavities, the right one having to be devitalized. The right lateral had two cavities (mesial and distal), and the left lateral was decayed to the gum line, and the root was putrescent.

Lower Molars.—Only one remained, and it was too badly decayed to put in a permanent filling. The others were all decayed away until only a few roots were left in the gums.

*Lower Bicuspid*s.—Two were present, one on each side, and both were decayed; the one on the right side so badly that it had to be devitalized.

Lower Cuspids.—Left one was sound, while the right one was decayed on both the mesial and distal surfaces.

Lower Incisors.—Both centrals were decayed, the left one having one cavity and the right one having two (mesial and distal). The left lateral was sound, while the right one had a mesial cavity.

When the recruit came to the College Infirmary to have his teeth attended to there was not sufficient time before his departure for South Africa to properly treat some of the teeth that were to be filled or crowned, and although under ordinary circumstances these might cause no trouble, the change of atmosphere, climate and diet would probably bring about conditions under which abscesses would not unlikely occur; and if, through any misfortune, his constitutional vitality should become lowered by fever or injury, this condition would be almost certain to follow.

M. PETERSON.

This candidate, without any suggestion from anyone, presented himself at the Infirmary of the Royal College of Dental Surgeons of Ontario to have his teeth set in order in the interval

between passing the medical examination and going to Ottawa. The truth is the medical officer did not look at his teeth or mouth at all. One medical officer remarked that he rarely examined a candidate's oral cavity. Isn't this strange when the officer has the requirements for the British Army before him, and instructions from the department at Ottawa to examine accordingly? It is doubly so when we know that the dental requirements for officers and recruits are rigorously lived up to in Great Britain, as reported from the department in the *British Medical Journal* of February, 1901.

The above requirements have been in force in the British Army for over two years, and have not been noticed as yet by the medical officers in Canada. It is quite possible that the Department of Militia is not acquainted with the condition of affairs. Another condition obtains in the British Army that the Department at Ottawa ought to be informed of, which is, the appointment of dentists to the army. Four dentists were recently appointed, equipped, and sent to South Africa to attend the teeth of the army. One dental surgeon has been appointed to the London district, and one to Aldershot. These appointments are made provisionally, until the Medical Army Bill is passed. In view of the condition of dental matters in the British Army, it is the plain duty of the dental associations of Canada to appoint a deputation to wait upon the Government of Canada to see that the regulations are carried out. If the Government should need any proof of the wisdom of such regulation, all that is needed is to refer them to the reports of the officers in the field. A national dental association is really needed to take hold of such matters as these.

THE VALUE OF A KNOWLEDGE OF BACTERIOLOGY TO THE DENTIST.

Copied from an answer given by a student of the Royal College of Dental Surgeons of Ontario, at the Annual Examinations, 1901.

1st. That he may be aware of the dangers of infection and the mode of transmission of disease, and thus protect himself and his patients accordingly.

2. That he may protect his patients from the danger of infection from other patients, from unclean instruments or surroundings, or from his own person.

3. That he may understand the fundamental principles underlying dental caries and the diseases of the oral cavity, and may thus be enabled to combat them intelligently.

4. That he may be in a position to add to the sum of human knowledge by properly informing his patients along this line, and thus benefit humanity.

5. That he may so much the better be able to take a creditable stand among the other students of the scientific world, and thus add something to the brilliancy of this great and noble profession for the amelioration of human ills, which stands enormously without a peer.

NATIONAL DENTAL ASSOCIATION.

The annual meeting of the National Dental Association will be held at Milwaukee, August 6th, 7th, 8th and 9th, immediately following the meetings of the Faculties Association and the National Association of Dental Examiners. This will be an exceptionally good meeting under the presidency of Dr. G. V. Black. The profession of Ontario and the East in general was well represented at the meeting at Niagara Falls two years ago, and should be found at the meeting in the West. A trip to Milwaukee from the East is very pleasant at this season of the year, because so much of the distance may be travelled by water. What could be more pleasant than to return or go by the St. Lawrence and the Great Lakes? The meeting will be uncommonly good from both a social and scientific aspect, because of its being held in a city noted for that which conduces to geniality and communicativeness.

DENTAL ASSOCIATION OF WESTERN CANADA.

The Dental Association of Western Canada meets in Winnipeg July 29th and 30th. For programme see June number of the DOMINION DENTAL JOURNAL. C. N. Johnson, of Chicago, will be present.

Editorial Notes.

DR. H. HARTMAN is practising at his home in Meaford.

DR. WILLIAM HENRY MORGAN, of Nashville, Tenn., died May 16th, 1901.

TRY adrenalin to stanch hemorrhage after extraction or after immediate extirpation of the pulp.

DR. J. E. SINE, of Rochester, N.Y., has accepted the editorship of *Dental Office and Laboratory*.

DR. J. A. HOGAN is practising at Tottenham, Ont.

DR. FRED. MURRAY, of East Toronto, and Miss Belle Henderson, of Toronto, were married June 20th.

DR. J. L. McLEAN, graduate of the Royal College of Dental Surgeons, of Ontario, has located at 144 Yonge Street, Toronto.

TRINITY University, at its convocation, May 31st, conferred the degree of D.D.S. upon Malcolm W. Sparrow and H. R. Abbott.

NEW York will take a census of the consumptives in that State. Another will be taken in a year or two for the purpose of comparison.

DR. W. J. HILL, of Alliston, and the eldest daughter of the Rev. J. B. S. Burnett, were married at the residence of the bride's father, Alliston, June 4th.

THE following graduates of the Royal College of Dental Surgeons of 1901 have located: Dr. Norris, at Brantford; Dr. Sims, Burk's Falls; Dr. J. A. Robertson, Whitney; Dr. S. J. Gibson, Peterboro', and Dr. James Frizzell, London.

THERE seems to be some difficulties in the ranks of the medical profession of Ontario over the annual fee of two dollars. There is not so much objection taken to the paying of the two dollars as there is to the manner in which it is expended by the Council.

THE British Dental Association will hold its annual meeting at the Cecil Hotel, London, August 3rd to 6th. As a great number of Canadian dentists visit England every year during July and August, they will have an opportunity of visiting their professional brethren at the most important meeting of dentists held in Great Britain.

RECEIVED a copy of "Lectures on Fractures of the Maxillæ," by Thomas L. Gilmer, M.D., D.D.S., Professor of Oral Surgery North-Western University Dental School, and Oral Surgeon to St. Luke's Hospital, Chicago. The lectures are very largely historical, showing the development in this department of surgery during the past fifty years.

CONCLUSIONS OF DR. STEARNS ON THE KINETICS OF THE Mallet.—The lighter the mallet consistent with practice, the harder the surface and the higher the co-efficient of restitution, the greater the proportion of the energy developed absorbed by the gold. The heavier the mallet the softer the material, the lower the co-efficient, the greater the proportion received by the patient.

THE Ontario Medical Association held its twenty-first annual meeting in the Normal School, Toronto, June 18th, 19th, and 20th. Although there was a very attractive programme presented, besides several social events, the attendance was not more than sixty or seventy at any single session. It is often said that the dentists of Ontario are lacking in Association interest, and yet the attendance at the annual meetings is never less than a hundred, which compares very favorably with the medical profession, whose population is a little over four times that of the dental profession.

Reviews

Poems of the Farm. By DR. C. N. JOHNSON. Chicago: Daniels Company Press. 1901.

Talking about character, and the desire of man to live a whole life—not only to live, but to express either in music or art or literature what one sees and knows and feels to be the truth of things—it seems to me we have a very striking example of such expression in the lately published volumes of poetic scraps “Poems of the Farm and Other Poems,” by Dr. C. N. Johnson, of Chicago.

With whatever admiration we may look upon the author as a fellow practitioner, with whatever enthusiasm we may laud his achievements in the profession, no matter how greatly we may stand in awe of his indefatigable energy in educational or literary affairs, it is as a man we at last come to judge him, and as an expression of noble, affectionate manhood this little volume is the complement of his professional exploits. The doctor loves whatever he looks upon, and his looks go everywhere.

Among the best of the old farm poems is “Doin’ Chores on the Farm,” and the “Horse Race at the Corners.” After describing a frosty morning,

“When the kitchen ’round the cook-stove is the only
place that’s warm,”

he takes one to the stables.

All at once you hear a clatter when you reach the
stable door,
Body’d think that them there critters never hed ben
fed before;

Horses pawin', cows a-bellerin', tie-chains clankin'
everywhere.

Cattle crowdin' 'gainst the mangers, noise enough to
split the air.

Hurry up and snatch some fodder, give a taste to every
one,

Jest enough to keep 'em quiet till you git the cut feed
done.

Mix it up with meal and water; all the while keep
watchin' out,

Brindled Bess may push the trap-door open with her
pokey snout.

Wheel and whack her with the shovel, yell like fury,
"Out o' that!"

Cow jest shakes her head fer meanness—hit her nose
another spat!

Bess is always lean and hungry; makes no diff'rence
what she eats,

Like some folks 'at you and I know—reg'lar bread and
butter cheats.

It seems to me the last two stanzas of the poem would be better
interchanged, ending:

"And I guess 'at most o' farm-work runs along about the
same—

You do a thing and do a thing until that thing gits tame;
And yet of all the doin's either in or out o' doors,
There's none 'at suits me half so well as just a doin' chores."

"The Horse Race at the Corners" is a most typical picture
of country life, opening with scenes in the general store, "with
old man Chrysler drinkin' some, and Abs'lom Miller more,"
where a bet of two dollars and a half is made on the horses. The
country is in a great state of excitement until the race comes off,
in which Chrysler's Chickasaw baulked and bolted, but came in first
and then the decision of Deacon Stapleton, which we quote:

"Now, no one need to tell me which horse came in ahead,
I was standin' in this very spot and seen the thing," he said.
And while old Chick was in the first, what was his racin' like?
He run all over God's domain, while Ace stuck to the pike.

"And I'm a-goin' to give the race to which one suits me best—
It don't cut any figger what might chance to suit the rest.
I'm jedge and jury in this case, and I hev hed my say:
I've said 'at Ace was winner, and it ain't no other way!"

So there the matter ended; but the people ripped and tore,
And pestered Deacon Stapleton until he nearly swore;
And yit I've often noticed that it always is the case,
Where men or horses jump the track they fail to win the race.

There is no poem in the volume shows greater power or is more stirring in feeling than "The Old Soldier's Sentiments." It was delivered at the Veterans' entertainment five years ago, but at present is most a *propos*, so we quote in full:

In the battles of the ancients, in the memories of the past,
Whene'er a war was finished it was hoped to be the last;
But the records turn the tables, and there comes a war again,
With prophesies that war *will* come so long as men are men.

And now we hear, in recent days, the echoes from afar,
Of foreign nations everywhere preparing for a war;
And even here in freedom's home—our own beloved land,
The penny-liners all insist that we must take a hand.

I think I've always noticed that when a war was rife,
Some writers seemed to take delight in stirring up the strife;
And while my comprehension may not be very wide,
I'd like to broach the subject from the veteran soldier's side.

I've been through Antietam, in the recent civil strife,
And had my share at Vicksburg, with a varied army life;
And while it may be glorious for the men who speak and write,
The glory gets diluted for the men who march and fight.

When you've slept out-doors in winter, lying close beside your
gun,

When you've marched all day in summer in the broiling southern
sun,

When you've trembled with the ague till the world seemed trem-
bling too,

You've begun to grasp in earnest what a war is like to do.

In the morning, sore and sleepy, startled by the bugle's blast,
Bolt upright, with eyes a-staring—dreamed *that* fight had been
your last!

Till you're wakened to your senses by the orders of the day,
And realize that war is something else than children's play.

Then in battle what a tempest storms about your heart—and
head!

Charging through a broken battery, tramping on the quivering
dead!

Spurting blood and flying splinters—tragic turmoil, yell on yell!
Nothing more or less, my comrades, than a pure and simple hell!

What are all the pomp and splendor, what are all the colors
bright,

When the end of so much grandeur is to merely shoot and fight?
What are all the glittering trappings, polished o'er and o'er
again—

What are guns, and swords, and bayonets, when they're made
for killing men?

What are all the glorious triumphs, when you're prone upon your
back

With a bullet in your vitals, writhing, tortured, on the rack,
With your glassy, staring eyeballs peering upward through the
glare

Of the heat-waves rolling o'er you in the stifling, sickening air?

What are all the flaring headlines in the papers day by day—

What are all the grand achievements that the orators portray;

What are all the deeds of valor that are lauded far and wide,

When you see your comrades lying limp and lifeless, side by side?

What are all the brilliant records of the officers and men,

When the dear ones round the fireside never see them home
again?

What is fame, and name, and lustre, when the mothers and the
wives

Lose their hearts and hopes forever—when their soldiers lose
their lives!

Little children, in their prattle, adding to a mother's pain,

Ask for papa every evening in the twilight—ask in vain;

When the happy family circle mourns a sudden void revealed,

With the one who filled it lying on some distant battlefield.

Aged parents, lone and helpless, listening with an anxious ear,

Begging news of absent regiments—news they'd better never
hear;

All the heartaches of the nation going forth from day to day,

Prayers of saints and prayers of sinners—those who seldom ever
pray.

Ah, my comrades, these the glories, these the pageantry of war—

All the land engulfed in mourning—one continuous funeral car.

Desolation drear as ever pictured by a human pen,

Sacrifices most heroic—hearts of women, lives of men.

Such was that which racked our country in the fight for free-
dom's cause,

And when other wars are mooted let us recollect and pause.

Soldier boys who fought and suffered—men the bravest in the world.

They the ones whose hearts are lightest when the battle flags are furled.

Then let's gather round the hillocks, round the mounds of sacred clay,

Let us scatter flowers freely over Blue and over Gray ;
And while paying tender tribute to the memory of our dead,
Let us, when a war is threatened, trample on the monster's head.

But it is the poems to the children which are the pure burst of affectionate expression, and there we have revealed what we only have an inkling of in the many kindnesses which Dr. Johnson shows his students, the happiness of his home life: "Spoiling the Baby," "Kiss the Spot to Make it Well," "My Baby," "Holding Baby's Hand," "Papa, Tum Home Early," are some of the happiest bits of simple love song I have read.

Quoting some of the most rhythmical, we find these lines:

"And what care I for theories,
Or maxims, and the rest,
When baby cuddles softly
To sleep against my breast?"

"Old maids may be prophetic
And nurses ill at ease,
But I shall walk my baby
As often as I please."

—From "*Spoiling the Baby.*"

"If all the world were weary,
If all the world were sad,
Of course I'd not be joyous,
Of course I'd not be glad;

But if all the world were weary
All the world—ah, me!
I'd not be quite forsaken
With baby on my knee."

—From "*My Baby.*"

"What is home without the children?
Just an egg without the meat,
Just a nut without the kernel,
Just a sun without the heat."

—From "*What is Home Without the Children.*"

" In the world's great strife and battle
I but make a sorry fight;
In the world's illumination
I but shed a feeble light.

" Yet while void of force exalted
Great enough to stir the land,
I've a mission meek but mighty—
I can hold a baby's hand."

—From "*Holding Baby's Hand*."

And as we read these unpretentious yet pleasing verses, full of warmth and love, we wonder where the time comes for such a busy man to indulge in such a recreation, but he tells us in the last one in the book, called "My Hour," an hour when "the real folk are in bed;" when "the sand-man with his sand has sprinkled grains in little eyes;" when "Tottie" and "Pattie" have put away the hobbie-horse and rattle, and the imagination has time to play with "harmless ghosts and little goblins"; when "time is nothing but a shadow, space is spanned by winged thought," then, he says, "I'm king in my dominion, with a little desk my throne."

" Thus I sit in waking dreamland as the moments steal away,
Quite unconscious, while the clock is striking in another day;
What though half I think's unwritten, and the other half unread,
Priceless is this cherished hour when the folks are all in bed."

CHARLES E. PEARSON

(For the DOM. DENTAL JOURNAL).

Oral Sepsis as a Cause of Disease. By WILLIAM HUNTER, M.D., F.R.C.P.

This is a very well gotten up monograph of thirty pages on an important and interesting subject. The relation between oral sepsis, which is usually the result of diseased teeth and gums, ill-fitting crowns, bridges and plates, and gastritis, tonsillitis, pharyngitis, glandular enlargements, is pointed out, and cases from practice given to illustrate. The author points out that no surgeon or physician would allow a patient to suck the pus from a boil, and yet patients are sucking pus from their gums continuously without any effort being made to correct the condition. Dentists who are in the habit of allowing abscesses with fistulous openings in the mouth to go untreated would do well to read this valuable book. Physicians who administer drugs month after month for the relief of gastric disturbances, without even know-

ing whether the patient has ever cleansed his teeth and mouth or not might read William Hunter's work on oral sepsis with advantage to his patients.

The author lays down the principle that the physician should aim to prevent disease, and with these premises shows the number of ills that may be escaped by proper oral hygiene. The treatment of oral sepsis recommended is peculiar, to say the least; in general it is good, but in particulars rather faulty—*e.g.*, apply 1 in 20 carbolic acid to diseased roots with a camel's hair brush. This is surely only temporary. The author seems to be in doubt as to who should treat these cases, because he says: "The surgeon looks upon sepsis in the mouth as coming within the domain of the physician, unless there be an actual disease of the jaw. The dental surgeon will treat the diseased tooth dentally, but he will not have his patient come back in order to be treated locally, so the patient is left with his septic gingivitis and stomatitis." What is meant by treating a patient "dentally" and leaving a gingivitis untreated? It is unquestionably the dentist's duty to treat all diseases of the teeth and all conditions the result of diseased teeth. The author mildly suggests that dentists should not put crowns, bridges, or "tooth plates" over black and diseased stumps. The careful way in which this point is handled would make one believe that such methods are in common practice. Such practice might have been condemned with a great deal more vigor. Dentists, physicians, and patients should read this little monograph, because it treats of an important subject where exact information is lacking.

WANTED—A copy of *Dental Review* for January, 1900.

W. G. L. SPAULDING, *Librarian.*

Royal College of Dental Surgeons, Toronto.

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DOMINION DENTAL JOURNAL.

Dominion Dental Journal

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No. 8.

Original Communications

LECTURES ON CROWN AND BRIDGE-WORK.

BY F. J. CAPON, D.D.S., L.D.S., M.D.S., TORONTO.

(CONTINUED FROM LAST ISSUE.)

ANATOMICAL RELATIONS.—The first consideration is the position of the root to be crowned; and, second, its form. Its position includes the class of tooth, whether it be an incisor, cuspid, bicuspid, or molar; next, its relative position to its neighbors and to its antagonists, and what will be the relations of the artificial crown in these particulars.

Each class of tooth has a definite office to perform, and there is involved in performing its function an amount and variety of stress governed by the position of the tooth, and the class to which it belongs.

Incisors, by their position and form, are designed to receive and resist stress in one direction, that tending to force them outwards.

Cuspids in two directions. Two forces act at an angle upon the axis of the tooth, and the result is a line outward.

Bicuspids are subjected to *three* stresses: vertical, outward, and inward. The relative amount of stress is in the order given.

Molars.—Vertical stress is the greatest, and in direct ratio to the extent of mastication surface, the lateral stress to the length of the cusps. Artificial crowns should then be made of varieties to meet and resist the several directions of stress. The

line of greatest mechanical resistance in any root is in its vertical axis, and is the only line of stress which does not tend to mechanically displace the tooth.

PHYSIOLOGICAL RELATIONS.—Under this heading are considered the vital conditions of the teeth or roots, and of their sources of nutrition and support; if the pulp be alive what is its condition, and whether it is possible or advisable to place an artificial crown without effecting the destruction of that organ. Teeth are occasionally broken in such a manner as to render restoration of form by filling material inadvisable, and yet not uncovering the pulp. It is possible, then, to adjust an artificial crown without destroying or disturbing the pulp; it is evident that a gold cap or a jacket crown are alone applicable. Next, what is the condition of the dentine?

The condition of enamel rarely is a factor in crowning.

The Condition of the Pericementum.—This includes a consideration of the existing vital relations of this tissue, and the possible sources of irritation to it, formed by the placing of a crown or acting after the crown is set.

PATHOLOGICAL RELATIONS.—As teeth which require artificial crowns have been brought to their condition by the action of pathogenic agencies, these if unchecked will ultimately cause the loss of the tooth itself; they are therefore the most important of the factors requiring attention.

The question of existing and pathological conditions and their treatment belongs properly to the province of dental pathology and therapeutics; but the subject before us is the common ground upon which the therapist and prosthodontist meet; their offices are the two steps of a common operation.

If a tooth contains a vital pulp, and it is designed to retain that organ, the infected dentine, that invaded by caries, should be removed with the same care as though it were being prepared for a filling. Should the pulp be, or have been, the seat of inflammation, it is destroyed and removed. If alive and is to remain so, the same care is observed in guarding against thermal shock as with filling, so that, after placing an artificial crown upon a stump containing a vital pulp, there should be no increased response to applications of heat or cold.

PREPARATION OF ROOTS—THERAPEUTICS.—If the pulp be the seat of purulent inflammation or of moist gangrene it should be removed, so that none of the pathogenic organisms may be forced into the tissue above the apex. The root and the degenerated pulp tissue are filled with a strong penetrating antiseptic (Pyrozone), and this is permitted to exercise its properties before the broach is applied. It is a wise precaution to wash the mouth

with this solution prior to opening any pulp-chamber in which there is putrescible material. When possible, the rubber dam is applied, the cavity is dried, and a strong solution of sodium peroxide carried into the canal, gently stirring it with an iridio-platinum broach; as soon as effervescence ceases wash out the canal with sterilized water, and repeat the application of the peroxide until access is had to the apex of the root.

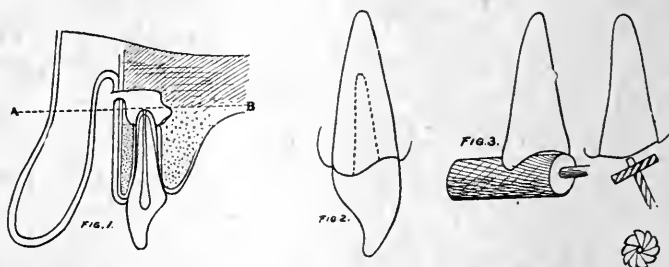
The dentine of the roots which have contained gangrenous pulps is the seat of more or less albuminous decomposition, so that ample time should be taken in sterilizing it, preferably by the sodium peroxide, as this substance is itself decomposed into sodium hydrate and free oxygen, the former saponifies the fatty products of decomposition and dissolves the protoplasmic filaments; the oxygen drives out the dissolved materials, and effectually destroys any organisms present.

If there be no exudation from the apical tissues into the canal, it is common practice to dry out the canal by means of alcohol and hot blast, and fill the apical portion of the canal with a gutta-percha cone, which is forced into the canal after being filled with a semi-fluid of chloro-percha containing an antiseptic, oil-cajaput, cassia. Should the apex of the root be the seat of an abscess, this is to be cured before the apical foramen is sealed. The canal is washed out with the sodium peroxide and cleansed thoroughly; no harm is done if the solution be forced through the root. Succeeding this, a solution of caustic pyrozone (5 per cent.) is pumped through the canal into the abscess-sac until the pus is driven through the fistula. As a rule these roots may be filled at once, and the abscess-sac is soon obliterated by the formation of new tissue about the apex of the root. It occasionally happens that the fistula does not close after one injection, so that as a precautionary measure the permanently hermetical sealing of the apex of the canal is deferred until it is seen the fistula heals and the normal color of the gum is restored over the affected tooth.

Cases present at times which give a history of a fistula alternately healing, then opening. Even after repeated injections the fistula will open periodically, and a discharge of pus or serum occur. A condition is present at the apex of the root which demands removal by amputation of the apex. Before the pus at the apex of the root makes its escape through a fistulous opening in the gums, the destruction of tissue incidental to and characteristic of abscess proceeds in all directions, so that by the time a fistula is established the end of the root is extending into an irregular cavity, the pericementum destroyed for some distance about the apex, and the uncovered portion of the cementum saturated with noxious material.

When the pus above the dotted line (from A to B in Fig. 1) discharges, the fistula may heal and remain closed until an increased pus-formation again re-establishes the fistula. —

The gum is to be divided above the apex of the root, and pericementum is scraped from a small area, and free entrance is gained to the abscess cavity by means of sterilized burs. As soon as the bleeding is checked a fissure bur is passed through the opening and the denuded portion of the root cut off and rounded. The sterilization of the canal and its filling have preceded the amputation. In what are known as blind abscesses, those without a fistulous tract leading from them and discharging externally, it is advisable where possible to make an artificial fistula. The mouth is sterilized, and a crystal of cocaine placed on the gum over the apex of the root. The length of the root is measured by a broach in the canal, and its length measured on the gum over the root. A crucial incision is made through the gum, the bone denuded of periosteum over a small area, and a spear-



pointed engine-drill is quickly passed through the bone and into the abscess cavity. The case is treated then as a simple abscess. The operation may be made almost painless by injecting a few minims of a four per cent. solution of cocaine, or better, chlore-tone. The canal is filled after a thorough sterilization, and pending the healing of the abscess-cavity the external opening is kept patulous by means of a couple of strands of floss silk acting as a tent and means of drainage. Persistent endeavor should be made to enter freely and cleanse out perfectly to the apex all the fragments of pulp-tissue in the roots of teeth, even in the most minute canals.

The introduction of the use of sulphuric acid in connection with broaches, for gaining entrance to, enlarging, and cleansing canal, has added to operations of dentistry a most valuable expedient, and furnishes a means for the removal of a common cause of apical pericementitis, imperfect removal of pulp-fragments. A drop of a 50 per cent. solution of sulphuric acid is placed over

the mouth of a fine canal and pumped into it by means of a fine Donaldson broach.

Much patience will be required to effect the desired end in some teeth, but so long as there is an imperfectly cleansed canal there is the ever-present fear of the possibility of abscess, and if the crown be properly set, it is most difficult to cure the diseased condition.

Roots of teeth which have a portion of their surface overgrown by a hypertrophied gum-tissue must have the latter removed, so that the field of operation may be open. If it be a pendulous mass, the gum is excised sufficiently to free the root outline. If the margins of the root be covered by the gum, it is to be pressed back until the field of operation is free. The canal and the pockets beneath the gum margins are washed out with antiseptics, and the canal and face of the root dried. A block of temporary stopping is made and formed into a cone, the small end of which is pressed against the face of the root, and the mass is flattened so that it presses the gum away from the root on all sides. "Should there not be sufficient concavity in the root to hold the stopping, a tack may be pressed into the canal and the gutta-percha wedge build around the post."

MECHANICAL PREPARATION OF THE ROOT.—The manipulations required in the mechanical preparation of teeth or roots for the reception of artificial crowns are of two varieties:

1. The reduction of the existing volume to the necessary form and dimensions.

2. Those cases in which it is necessary to restore in part the form of the root lost by decay, so that it will serve as a base for a crown.

Crowns supported by posts should be so adapted to the roots upon which they are placed that their peripheral junction is as nearly perfect as possible; there should be nothing between their surfaces but an attenuated layer of the retaining medium. At no point should the surfaces overlap; an instrument passed around the line of union should discover no projection of the crown beyond the root (Fig. 2).

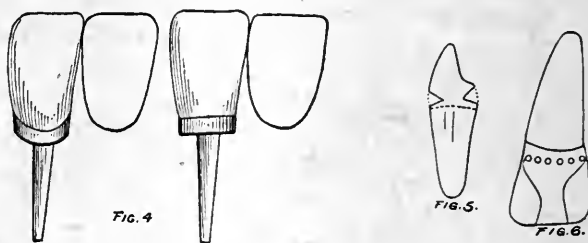
Roots should be so prepared that they furnish adequate mechanical support to their artificial crowns. As they represent the restoration of form, their bases should be so shaped by carborundum stones, files, or facers (Fig. 3) as to permit the accurate adaptation of anatomically correct substitutes.

In shaping the external cervical margins or edges of roots, care must be exercised to give them such an outline that the artificial crown has a cervical edge of the same outline as that of the adjoining teeth. The septum of gum in the interproximal space

will fall if the root which forms a support is taken away. There should be no irritation at this point, or atrophy or congestion of the tissue will take place, and the falsity of the crown shown; if a collar, it will become exposed (Fig 4).

The second class of tooth-preparation or root-shaping operations are found in those cases where it is necessary to reduce an entire crown or a considerable portion of one to desired dimensions.

When decrowning is necessary to fit teeth containing vital pulps for service, as the abutment of a bridge, they may be removed after the manner described of incising the crown and the immediate extirpation of the pulp, by deeply grooving the outer and inner walls of the tooth (Fig. 5), and the use of the incising forceps. The organ is then destroyed by the driving-out process or extirpation after cocaine injection. This method, if practised upon teeth containing dead pulps, is occasionally followed by obstinate pericemental trouble.



Correct cervical outline. Faulty outline.

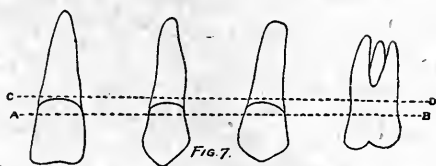
The crowns of pulpless teeth may be readily removed by making with a spear-point drill a series of perforations, as Fig. 6.

A dentate fissure bur is used to cut between the drill-holes. The irregular fragments of crowns may be cut away piecemeal by the small, "sharp" incising forceps until they are almost on a line with the gum margin.

The trimming is continued until the root-face is about one-twentieth of an inch beneath the gum-line. This shaping is accomplished by stump corundums, oval files, Herbst rotatory files, and Ottolingu's root-facers.

Reducing Teeth for Barrel Crowns, Bands and Cusps.—It is essential that all barrel or collar crowns shall form a perfect joint with the periphery of the root. This portion of the root shall have a greater sectional area than any portion of the root or tooth over which the band or barrel is passed in adjusting it. The walls of the root or tooth should be at least parallel above the crown edge line, and if possible it is better that they be given

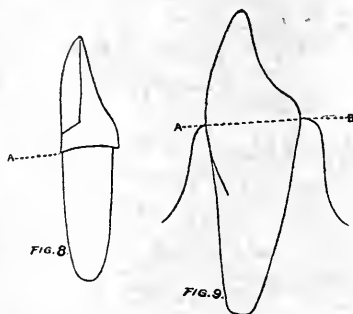
a slight slope, so that when placing the band or cap they will go on with a slight stretch. In taking the different measurements of the teeth it will be found that the periphery of the roots of teeth is usually larger at the gum margin than at a point 1-16th of an inch beneath this margin, shown by the dotted lines from A to B, and C to D, in Fig. 7. Now the form should be changed; a tooth or root should be trimmed, so that the portion of the crown or root extending beyond the gum margin has a less cir-



cumference than the portion 1-16th of an inch above this margin.

The evils attending and following this class of crowns are due in a great part to inaccurate adaptation of the edge of the collar to the periphery of the root. I must say it is a task of some little difficulty to properly shape a tooth or root for the reception of a collar crown, and no easy operation to accurately fit a metal band to the prepared root.

It is a common thing to find that very many, perhaps a great majority, of these crowns are imperfectly fitted or the root improperly prepared. An instrument passed around their borders



discovers an irregular shoulder produced by the lack of adaptation of the collar (Fig. 8). Such spaces form pockets in which food deposits and secretions find lodgment, so that the irritation produced by the projecting collar edge is increased by contact with the products of fermentative decomposition of the deposits, and pericementitis is liable to occur.

The sectional area at the gum line is greater than beneath it, so that a band fitted to the root cut off at the gum margin (A to B, Fig. 9) would necessarily leave projecting edges if forced above the line.

To cut down a tooth, the instruments are: Incising forceps, carborundum and diamond disk, Evans, How, and Case cleavers.

FULL REQUIREMENTS OF AN ARTIFICIAL CROWN.—It should, as nearly as possible, restore the appearance and function of a natural tooth.

A crown must rest firmly upon the face of the root upon which it is placed. The contact must be at all points of the edge of a crown with a tooth surface. If of porcelain, it must correspond in size, shade, and position with its fellows, and must subserve its purpose in mastication. There should be at no part any projection which can form part of a pocket, nor any point that can act as an irritant to vital tissue. The line of junction between tooth and crown should be clean and clear, so that neither the surface of the root projects beyond the edge of the crown, nor the edge of the crown beyond that of the root.

If a barrel or collar crown, the upper edge of the collar must be in close contact with the root surface. It should extend far enough beneath the margin of the gum to grasp the root firmly, but should not extend to the alveolar border; let the collar represent or replace the upper border of enamel, it should not extend much beyond the depth of enamel line unless the gum has receded from the tooth.

For posterior teeth the details as to the size and contour are equally important, and in addition their articulating surfaces should have such an arrangement of cusps and sulci that the normal masticating surface is restored.

(To be continued.)

THE EMBRYOLOGY AND SURGERY OF CLEFT PALATE.

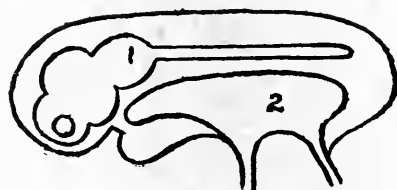
BY HADLEY WILLIAMS, F.R.C.S.(ENG.), LONDON, ONT.

Read before the Ontario Dental Association, July 3rd, 1901.

Mr. President and Gentlemen,—When invited to take part in this meeting, I hesitated somewhat to comply, knowing how limited was my knowledge of anything pertaining to dental surgery, but considering that all the gentlemen of your profession whom I have the honor of knowing are of a character magnanimous, and of a disposition modest, and, moreover, being assured that no one would ask me any questions as to when certain teeth made their appearance (a subject I never could remember with any degree of certainty myself, or satisfaction to examiners), I decided to offer a few remarks on the origin of cleft palate, which

must be as interesting to the dentist as the surgeon, inasmuch as many cases, through neglect or non-success of operation, would compel them to seek some other method of closing the cavity existing in the roof of the mouth. The origin is most interesting and instructive, and it is to embryology we must turn in order to appreciate this defect. Being congenital, it exists either alone in the soft palate, through the long palate, or completely to the outside, and any of these conditions separately, from a mere dimple on the lip to a complete cleft, extending from the face to the uvula. The mouth begins to form quite early in fetal life, by a dipping down of the epiblastic covering to meet the hypoblast forming the enteric canal or bowel cavity. This septum between the two layers disappears and a direct communication is formed directly into what later becomes the pharynx.

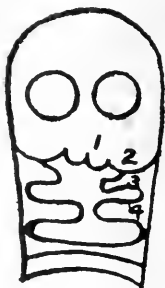
The front part of the neural canal has enlarged into the developing brain and various processes begin to grow downwards and towards the front to form the face, and complete the nasal



1. Neural Canal. 2. Bowel Cavity. 3. Mouth.

and oral cavities. Growing downwards from the frontal region are four processes, two lateral nasal and median nasal, and on the sides come forward the two mandibular bars, which eventually form the inferior maxillary bone by uniting in the median line about the fifth week. At this period the nasal and oral cavities are joined, but from the upper part of each mandibular bar a process springs up which gradually grows toward the median line, beneath the median nasal process and above the inferior maxilla, and these become joined together, forming the hard palate, shutting off the nasal fossæ from the mouth. This takes place probably about the seventh week, and union, taking place from before backwards, is completed about the tenth week. This maxillary process of either side forms the superior maxilla, etc., the mandibular bar, the inferior jaw, and the nasal processes, the septum of the nose, the vomer, ethmoid and a remarkable remnant, which is so well marked in some animal life, and which has much to do with a complete cleft of the hard palate, namely, the intermaxillary bone. This bone is triangular in shape, and fits in between the two superior maxillæ at its anterior part, with its broad

and rounded base lying beneath the lip, and its apex backwards and helping to form the anterior palatine canal. It takes up that much of the alveolar processes of either jaw, which later in life contains the four incisors. If, by a failure of development, the two palatal processes have not united in the median line to form a hard palate and the intermaxilla is also devoid of attachment, a complete cleft will extend from the palate bone behind to the lip in front, forming a fissure like the letter Y; and this intermaxilla in some cases lies quite loose in its position, and contains, as noted previously, the four incisor teeth. It may be well to mention here that such cases, though fortunately very rare, give the greatest trouble to the owner, and it is the treatment of many eminent surgeons to completely remove this triangular-shaped bone rather than endeavor to fix more firmly by wiring or other



1. Median Nasal Process. 2. Lateral Nasal Process. 3. Maxillary Process. 4. Mandibular Bar.

appliances, since it always remains a tender spot, and the incisors alter their direction and become useless, to say nothing of the deformity which becomes so marked. It has been noticed in these cases that the anterior alveolar parts of the jaw have a remarkable tendency to approximate themselves as an endeavor to close the gap, while in cleft palate proper the fissure seems to widen as time goes on if no treatment be adopted for its cure.

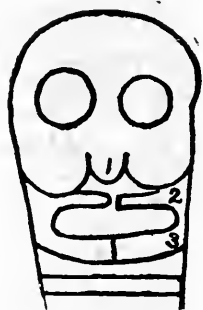
Sometimes an opening will be found in the hard palate and connected with the nasal fossæ in those who never have shown any congenital cleft. This condition must not be confounded with the subject of this paper, since it is due to ulcerations from such as tuberculosis and syphilis. Occasionally an opening is left in the centre from failure of the stitches to unite the edges, but the history would easily obviate the difficulty of diagnosis.

In discussing the time to operate in this condition there is, of course, as in all things, much diversity of opinion among those of the largest experience. Some consider six weeks to six months for hare-lip, and two years for the cleft. Others, again, prefer

either much later or much earlier. One of your own profession in Chicago prefers to operate on the cleft first and leave the lip for a later period, and puts the time from two weeks to three months.

Without going into any discussion as to the dangers, the *pro* and *con* for early or late interference, and other things being favorable, it does seem reasonable, to say the least, that the child should have something radical done as early in life as possible, to favor a pure and sound articulation, the failure of which becomes such a drawback to its social success in after years.

Evidently, then, what the surgeon must endeavor to perform is an approximation of the two sides of the cleft, so that no communication be left with the nasal fossæ either to interfere with deglutition or the subsequent articulation of the child; and many are the methods practised, and with variable success. If the



1. Median Nasal Process. 2. Maxillary Process (forming Palate, etc.).
3. Mandibular Bar (Inferior Jaw).

uvula, or soft palate, alone be affected, then paring the edges and accurate suturing; if the hard palate, then from paring the edges to lifting the muco-periosteum alone, to anterior-posterior division of the bone with the chisel on either side, or complete pressure exerted on the maxillæ as a whole, according to the degree and extent of the deformity, and the taste and experience of the operator.

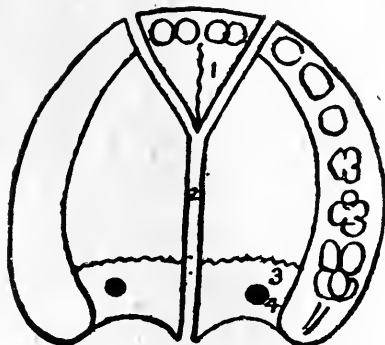
Leaving out any discussion of muscle-division, in order to relieve the subsequent tension on the stitches, as practised long ago by Fergusson and many others, since it seems to have fallen largely into disrepute, there are two or three recognized methods adopted to-day which seem to offer excellent results. It may be as well to remember, in judging of the extent of these operations and the subsequent results, how rapidly the facial bones alter in their relative parts to each other. For instance, at birth, the head is far larger in proportion to the rest of the body than in later

life, and the upper part of the head much more developed than the face, on account of the enormous expansion of the contained encephalon; in short, there is a remarkable difference in the relative size of that part of the skull above a line drawn around the head on a level with the external angular processes of the orbit and the parts below. The face is meagre, contracted in appearance, and too small, seemingly, for the upper protruding frontal region. If, for example, the palate bone be examined, the horizontal process which passes inwards from either side to join in the centre and complete the posterior hard palate, will be found to equal and even exceed in length the vertical process which passes up to help form the floor of the orbital cavity. Soon, however, these bones grow more rapidly and elongate in the vertical direction, not only altering the length of the face, but materially affecting the size and condition of the hard palate and nasal fossæ, as well as bringing out, in marked contrast to the earlier stages, the antrum of Highmore which, like all the other sinuses of the cranium, is slow to mature. This rapid alteration in the development of these parts would certainly modify opinions regarding the best time for surgical interference.

Among the various methods in vogue for the closure of the cleft, Layenbachs' & Diffenbach's seem to form a foundation for the many modifications following them. Fergusson severed the palatal muscles to relieve the subsequent tension, and received some success for his patients and support from the profession for many years. At any rate, in certain cases the edges are pared to freshen them up; an incision is made from before backward through the muco-periosteum, and parallel with the cleft, down to the bone, the tissues separated and the parts brought together; the cuts separating as the stitches are tightened and allowed to heal by granulation tissue, or a similar operation performed; but where the cleft is wider, a chisel is inserted with its margin parallel with the fissure, and driven into the bone through to the inferior meatus of the nose, and the part forced toward the centre to meet a similar condition on the opposite side.

Brophy, of Chicago, gives excellent results by ignoring the lateral incisions and using lead plates and silver wire as tension sutures, and in some cases bringing the two maxillæ, as a whole, together. It cannot be denied that the surgeon is occasionally unable to effect a cure, either in some relapsed cases, or where the patients themselves, or their guardians, are unwilling that surgical interference shall be undertaken; and in considering the favorable or unfavorable aspect of this deformity there are three well-marked points which may be put under the latter category: (1) A very low arch; (2) a wide cleft; (3) where the anterior extremity is wide and rounded.

The two latter speak for themselves; the first can be understood better by the explanation that since, when the muco-periosteum is separated from the bone, it is necessary for enough to be detached to fall towards the median line, much more would be available from a very high arch than from a very low one, and



ROOF of MOUTH,—1. Intermaxilla, with Incisors. 2. Cleft. 3. Palate Bone.
4. Post-Palatine Canal.

the tension, consequently, be much less, a result which materially affects the subsequent results. It is then to the dental surgeon that many of these cases look for help in their hour of need. A firm obturator for the hard palate connected to a flexible one for the soft, is said to give a most satisfactory result. That this



Side View of Protrusion of Intermaxilla (Treves).

can be done, to-day, is a credit to your noble profession, a profession, gentlemen, which universally commands the greatest respect for the skill, the ingenuity, and the rapid advancement it has shown during the latter years of the most scientific century the world has ever known.

Proceedings of Dental Societies

EASTERN ONTARIO DENTAL ASSOCIATION.

The twenty-second annual meeting of the Eastern Ontario Dental Association opened in Russell House, Ottawa, on July 3rd, at 8 p.m. The President, Dr. John Robertson, of Ottawa, occupied the chair.

After the reading and approval of the minutes, the following officers were elected: President, A. H. Maybee, D.D.S., Gananoque; Vice-President, O. H. Hutchison, D.D.S., Ottawa; Sec'y-Treas., W. B. Cavanagh, D.D.S., Cornwall (re-elected).

Dr. J. Armstrong, Ottawa, referred to the death, since our last meeting, of Dr. John Young, of Smith's Falls, and the following resolution of condolence was passed:

"Since our last meeting, a worthy member of this Association has been suddenly called from our midst, in the person of Dr. John Young, of Smith's Falls.

Resolved, That this Association record its regrets for the untimely death of our late confrere, and tender our sympathies and condolence to the bereaved relatives."

Dr. G. E. Hanna also referred to the death of the late Dr. Geo. W. Beers, of Montreal, and moved the following resolution:

"Since the last convention of this Association, a bright and honored career has been brought to premature termination by the death of Dr. W. Geo. Beers, of the City of Montreal.

Resolved, That the condolence and sympathy of this Association be tendered the bereaved family, and that a copy of this resolution be forwarded to Mrs. Beers."

In his retiring address, Dr. Robertson referred in feeling terms to the death of W. Geo. Beers, of Montreal, and Dr. John Young, of Smith's Falls. He also dwelt on the part played by dentistry in modern warfare. He drew attention to the fact that in both the English and American armies the services of the dentists are now realized and appreciated. At no distant date dental corps will be organized along the lines of the present important medical corps.

He also referred to the bill before the Ontario Legislature some time ago, having for its object the admittance of Wm. H. Fisher, a student, to his final year examinations. Fisher attended the Illinois School of Dental Surgeons, but has not passed the matriculation to the college. He claimed that the passing of the bill would establish a bad precedent.

Dr. Hanna referred at length to the latter part of the president's address. He considered that the dentists should have been

treated by the Ontario Government the same as the medical men were. He was of the opinion the best thing the Association could do would be to get up a monster petition, signed by the dentists of Ontario, and to present it to the Ontario Legislature. After discussion, the following resolution was passed:

"Your committee, appointed to report on the desirability of securing such legislation as will authorize the Board of Directors to discipline members of the dental profession for unprofessional conduct, would recommend that this Association submit a petition to all licentiates in the province, praying the Legislature to grant disciplinary powers, such as possessed by the Medical Council; and in the event of securing a majority of signatures favorable to such legislation, that the Board of Directors be requested to apply for such legislation at ensuing session."

Dr. Ira Bower referred at some length to the advisability of organizing a dental corps for the militia.

After discussion by some of the members present, the following resolution was passed:

"Whereas, the testimony of the officers and men who returned from the South African war reveals the fact that a great deal of suffering is caused through defective teeth; and whereas the means available for treatment in the medical department provided only for relief at the expense of those organs which bear such important relations to the general health and well-being of the soldier on active service; and whereas an examination of the condition of the teeth of the contingent first sent out has shown that many of the men were unfit for active service by reason of defective dental organs; therefore be it resolved, that it is expedient and highly desirable that provision should be made in our militia for the appointment of dental surgeons to the forces, who shall be fully equipped and capable of rendering aid to those afflicted with dental troubles, having in view the preservation of the teeth and the bearing they have upon the general health of the army.

"And that a copy of this resolution be forwarded to the different dental associations, to the Board of Directors of the Royal College of Dental Surgeons of Ontario, asking co-operation, and to the Minister of Militia."

On Thursday morning a very interesting paper was read by Dr. C. A. Martin, in which he scored objectionable methods adopted by some dentists to secure business. He stated that dentists, in their desire to better their financial position and improve their standing have really injured both. The fees were getting lower and the hours of work longer, whereas in other occupations, the trades for instance, wages are advancing and the hours

of work show a reduction. Dr. Martin deplored the steps taken by some dentists to secure a professional position in the community. Clubs and organizations, and even the churches, are used as instruments to further this end. To secure patronage and prestige, a dentist was formerly required to attend only to business. He could regulate his own hours, make his own appointments, and fix his own charges. Now he has to work frequently far into the night, and accept reduced fees, the reduction being brought about by the bargain-counter methods adopted by some dentists.

Dr. Martin also referred to the part played by dentists in the gratification of their patients' vanity. An elaborate and wholly unnecessary display is now made of gold fillings and crown and bridge-work until "a tooth looks like a door-plate minus the inscription." In conclusion, the local dentist urged his fellow members to guard with jealous care the ideals of the profession. "They alone can do it," he stated, "and in doing it they will elevate the standard of the profession in their own as well as in the eyes of the public." In this particular he thought a lesson might be learned from the physicians and surgeons.

Dr. Klotz, of St. Catharines, occupied the afternoon with a very instructive clinic on orthodontia.

Dr. M. G. McElhinney's paper on popular dental education, was referred to the DOMINION DENTAL JOURNAL for publication, as his time was given to Dr. Capon, of Toronto.

Dr. Capon was given all day Friday for crown and bridge-work, and porcelain. His clinics were very instructive, and highly appreciated by all present.

Cornwall was decided upon as the next place of meeting.

A vote of thanks was tendered to the press for their courtesy and attention in publishing the proceedings of the meeting.

Mr. St. Jacques, proprietor of the Russell House, was tendered a hearty vote of thanks for his kindness and attention to the members of the Association.

On Thursday evening the visiting delegates and the local dentists made the trip to Aylmer in a special car. A visit was paid to Queen's Park, after which the pleasure-seekers returned to the Hotel Victoria, where they made merry over an excellent banquet daintily served. Dr. Charles Martin was in the chair. The regular toasts were honored in an enthusiastic manner. A programme of songs was given, for which Mr. Ludwig Waizman was accompanist.

The principal speaker at the banquet was Lieut.-Col. Hurdman, who dealt in instructive and interesting terms with the campaign in South Africa. He referred to the absolute necessity

for a dental corps in the army on the same footing as the medical corps. The speaker stated that from personal observations he knew that such auxiliary units were necessary to the health of the men, many of whom having to live on rough fare, and being exposed to all kinds of weather, suffered from defects of the teeth.

Dr. Smith and Dr. Winnette, of Kingston, spoke briefly, thanking the local dentists for the entertainment furnished during the convention.

Songs were given by Drs. Davidson and Klotz.

The committee in charge of the banquet included Dr. Ira Bower, Dr. M. Armstrong, Dr. O. Hutcheson, Dr. Graham, Dr. Chas. Martin, and Dr. Robertson. The affair proved to be both successful and enjoyable.

W. B. CAVANAGH, D.D.S.,
Secretary E.O.D.A.

DENTISTS OF WESTERN ONTARIO.

A convention of the dentists of Western Ontario was held in the medical department of Western University, London, on July 2nd and 3rd. Quite a large number of dentists were present, and all evinced the greatest interest in the subjects presented.

The convention was opened by an address of welcome by G. A. Bentley, D.D.S., President of the London Dental Society, who assured the gentlemen present that they would have the pleasure of listening to and discussing some very interesting papers by men of both medical and dental professions.

Dr. C. E. Klotz, expert in orthodontia, was introduced by the President, Dr. Bentley. Dr. Klotz commenced his address with a few preliminary remarks, referring to the pleasant time spent at the last dental convention, held in London in 1889. He then introduced his specialty, orthodontia, dwelling more particularly on regulating appliances, the making of them, and the metal mostly used at the present time. In 1884 he experimented with German silver, and soon found out the good qualities of that metal; and since then has used it almost exclusively in the regulation of teeth.

He then explained the making of the appliances in detail, commencing with the drawing out of the wire, after it has been annealed; to the proper size for the screws, Nos. 54 and 56, B & S, wire gauge. For making tubes, Nos. 32 and 33 plate are used, cut 5-16 in. wide, and drawn through a draw-plate to the proper size to fit the screws. The nuts are made of No. 16 plate, or of

an American five-cent nickel, which is of the same thickness. He also made jack-screws, traction screws, rotating devices, bands, etc. Bands are made of No. 28 to 48 plate or wire, rolled to the necessary thickness, according to the space between the teeth or the strength required.

The bands are fitted to the teeth *in the mouth*, not on the model. In making bands for the anterior teeth the joint is always made on the lingual surface, and the projecting ends can be used to make loops or hooks by bending them over and soldering all together, thus having four thicknesses of metal, which after being trimmed and shaped is fully as strong as a piece of wire. There are two kinds of bands used, viz., the solid band just described, which is cemented on the teeth, and the clamp band, which is made with a screw and nut, and is fastened to the tooth by means of tightening the nut. Some teeth are so conical that cement will not hold the bands in place; to overcome this difficulty, dry the tooth to be banded, and paint it with a thick-setting varnish (sandarac or shellac will do), and then cement the band on, and it will stay in place.

The Doctor's mode of making wire cribs (Jackson's method) was interesting. Formerly piano wire was exclusively used for this purpose, but he uses hard-drawn German silver wire, which he draws without annealing, and finds that it answers the purpose in some instances even better than the steel piano wire. It does not corrode like steel, and can be adjusted more easily and neatly to the necks of the teeth on the model; moreover, attachments can be soft-soldered to this wire better than to steel, and without injuring the temper of the wire. In fitting cribs to the models, the teeth should always be scraped a little to secure a tighter fit when the crib is finished and placed into the mouth.

He then explained with practical demonstration the making of drills and taps, also the tempering thereof. In making taps for the purpose of making nuts, after the thread is cut in the previously annealed wire, the end is filed in three-sided fashion, this giving a better cutting-point than the customary four-sided one. To temper, heat the tap to cherry red and plunge into cold water (not too cold), then brighten the three filed sides of the point with emery cloth, so that the change of color can be readily seen; now hold the top in the gas flame until the end has changed to a dark straw or light brown color, and plunge into water again.

All soldering on bands, tubes, hooks, loops, etc., is done with silver solder of the following formula:

Coin Silver.....	24 grms.
Brass Wire.....	8 grms.

These are melted together and then rolled to the proper thickness.

Soldering on cribs is done with ordinary soft (tinsmiths') solder, and by means of a small soldering iron.

Dr. Klotz dwelt some time on explaining the necessity of re-inforced anchorage, since in many cases the anchored tooth will move more easily than the refractory one. To avoid this trouble, two or more teeth are banded together, or one is banded, and a piece of heavy plate of the same width as the band is soldered to it, resting on the tooth on either side of the banded tooth.

During his lecture, Dr. Klotz illustrated his remarks by showing a number of regulating appliances fitted on models, and also by blackboard drawings. At the close he invited the inspection by the dentists present of a very complete set of appliances neatly mounted on cards, made by him for almost every conceivable case of irregularity.

Hadley Williams, M.D., F.R.C.S., of London, read a paper on "Pathology and Treatment of Cleft Palate."

Discussion by S. Woolverton, A. E. Webster, and S. Moyer.

Dr. Woolverton said:

Mr. President and Gentlemen.—My experience in dealing with defects of the palatine organs has been quite extensive during the past twenty years of my practice in this city. I am sure we have all been delighted with the way in which the essayist has handled this subject. He has shown us how these congenital defects can be traced back in the human embryo at a very early stage of its development. He explained that the development in these cases did not proceed regularly and normally, but that there was a want of union between the superior maxillary and the inter-maxillary processes, producing what is known as cleft palate, associated often with what is known as hare-lip, which may be single or double. This is one of the most distressing deformities to which the human frame is liable, but to-day the skill of the surgeon and the mechanical appliances of the dentist are able to cope with and remedy, if not cure, the unfortunate sufferer by the closing up of the abnormal passage by some means which will restore to the deformed organs their proper functions. As dentists, we are called upon to construct mechanical appliances to afford relief in the most satisfactory way possible. When you have had much to do with this class you will often find it desirable to call to your aid a specialist in oral surgery. My experience is that when both surgical and mechanical skill are combined we have more perfect results in the treatment of fissured palates.

I will now cite a few cases that I can call to memory.

Some years ago a young lady called at the office wearing artificial plates, which had been constructed for her by a local

dentist—a full upper and partial lower. They were connected by a spiral gold spring to aid in keeping them in place. I found that there was a complete fissure of the soft palate, but the cleft only extended about half way through the hard palate. The upper plate had the usual appendage attached to it, a rubber flap resembling a chestnut. She was not satisfied with this arrangement, and was willing to pay for something different if it could possibly be made. After taking her impression, I constructed an ordinary suction plate, taking advantage of the remaining hard palate and extending the plate so as to cover over the defective part of the palate. This was worn with comfort for several years; later I had the satisfaction of making a full lower to match the one described.

I now cite another case of a much younger patient. She was brought to my office by her parents when she was about twelve years of age. There was a complete cleft of the soft palate, her teeth also were defective and had to be removed. I inserted a plate for her to wear for a time, but advised the parents to have a consultation with a surgeon, with the hope of a permanent cure.

Some two years ago the operation was performed by a specialist. It was a decided success, and she now wears an ordinary plate, her speech also being very much improved.

In several instances patients present themselves with a complete cleft of both hard and soft palates, accompanied by hare-lip. The family physician usually operates upon the lip at a very early stage of the child's life, but not always in a skilful manner. What is required in these cases is to replace, as far as possible, the natural form of the defective organs with such material as shall restore their functions. I suggested to many of these patients that they might be helped by a surgical operation, but in every instance they complained of the expense. So they continue to wear plates.

John Mills, L.D.S., of Brantford, then read a paper on "Some Modifications of the Condit System of Attaching Artificial Teeth," and also exhibited some practical cases illustrating his method and demonstrating their practicability.

On the second day of the convention, F. J. Capon, D.D.S., opened the meeting with his paper on "Crown and Bridge-work," and occupied the greater part of the morning. Robert Ovens, M.D., next gave a paper on "Diseases of the Antrum," which was very interesting, and was listened to with the greatest attention.

Dr. Moyer's paper on "Enamel and its Consideration in Cavity Preparation," was very instructive, and showed that the essayist was well versed in his subject.

In the afternoon Dr. Fitzsimmons, St. Thomas, read a lengthy and instructive paper on "Combination Fillings," and gave his several reasons for using the different materials in each case.

Dr. Burns, of St. Thomas, was unable to present his paper on "Local Anesthesia," and Dr. C. S. Butler, of Buffalo, was not able to be present to read his paper on "Diseases of Dentition."

Two days was a very short time in which to present the different papers, and on this account it was found advisable to limit the discussions to a few questions.

The several clinics given were very interesting, and covered a wide range of subjects.

CLINICS.

Dr. A. G. Fee, W. Superior, Wis., prepared and filled with cohesive gold foil a mesio-incisal cavity in an upper right central, demonstrating the Black method of preparation and filling in these cases. Dr. Fee's operation was watched with interest throughout.

"Quick Method of Replacing Facings on Crowns and Bridges," by Dr. H. R. Abbott. Dr. Abbott used Bryant's bridge repair outfit, with which it is easy to replace a broken facing without removing the bridge from the mouth.

"Dummies for Gold Bridges by the Morrison System," by Dr. Westland. Dr. Westland demonstrated his method in using this system, and showed that gold dummies can be made very rapidly and also possess great strength.

Dr. Lloyd Jones, Wolcott, N.Y., sent to the convention models and explanations of an emergency crown, which was very much appreciated.

"Condit System," by Dr. C. Windsor. Dr. Windsor illustrated by models his use of this system for attaching artificial teeth, and explained the advantages over plates.

"Correct Method of Taking a Bite," by Morley Braddon. If an upper plate is to be made, Mr. Braddon takes impression and gets model in usual way, then makes a base-plate of compound to fit the palatine surface of the model; he then builds a rim of wax around the rim of this base-plate for the lower teeth to bite into. This is inserted in the patient's mouth. The lower teeth biting up into this wax leaves their impression in the wax, and when setting up on the articulator the models of upper and lower will be in proper relation to each other, and a correct articulation secured.

A. E. SANTO, *Secretary.*

Selections

THE RELATION BETWEEN DENTAL CARIES AND CERVICAL ADENITIS.

BY C. H. PRESTON, M.D., B.S.(LOND.), F.R.C.S., L.D.S.(ENG.)

Read at the meeting of the Midland Counties Branch, held at Chester, February 23rd, 1901.

In considering the question of chronic enlargements of the lymphatic glands of the neck in relation to the teeth, the view taken of the pathology is most important as regards the treatment; and it will be well to recall for a moment the opinion held as to what is called "struma," and its relation to definite infection by tubercular disease.

This view is, that an individual may be "strumous" without (as yet) being infected by a definite lodgment of tubercle bacilli in any of his tissues, but that the tissues of a strumous person are in a peculiar condition of depressed vitality which renders them more than ordinarily liable to be attacked by any tubercle bacilli which may be circulating in the blood or lymph.

These organisms may be introduced into the system of anyone; are constantly being introduced into the system of all of us. But unless the individual is of the "strumous" or "predisposed" class, the tissues possess so much resistive power, and the white blood corpuscles and other cells possess such strong fighting qualities, that the invaders are rapidly eaten up and destroyed, and no detrimental change results. But in strumous subjects this power of resistance is lowered; the organisms can lodge in the tissues—they are not destroyed—they live and multiply, and by the irritation of their presence produce the various changes characteristic of tubercular disease.

These changes are: that around the organisms—probably by the irritation of their presence, "tubercles" are developed—abnormal aggregations of cells which fuse together into larger masses and ultimately, in an accessible region, form a palpable swelling or tumor.

These masses of cells, closely packed together and newly developed without any corresponding increase of the blood vessels for their nourishment, are peculiarly liable to degenerate and break down—especially in their central portions furthest removed from the vascular supply, and so we get abscesses, sinuses, and so forth.

But in addition to their liability to tubercular infection, the

tissues of strumous persons are peculiarly ready to pass into a state of chronic inflammation when subjected to any slight irritation. Such inflammation is at first non-tubercular, and is characterized by slow enlargement without much redness, pain, or heat. These tissues, when chronically inflamed, have their powers of resistance reduced still lower than when they were not inflamed, and so any tubercle bacilli which may happen to lodge in them at such a time have a specially good chance of escaping destruction by the white corpuscles and tissue cells, and of growing and forming a tubercular deposit. Hence the frequency with which an inflamed strumous tissue, at first non-tubercular, afterwards becomes definitely tubercular, and as such, a source of more extensive infection.

The lymphatic glands are naturally among the tissues of the body most prone to show this deleterious sequence of changes, because lymphatic vessels, taking origin in the meshes of the other tissues, carry to the glands any substances which may be wandering about in the tissues, and there these become for a time impacted, and leisure is given them to produce their effects.

Such substances may at first be the ordinary bacteria of sepsis or their products, and in such case we shall first have a simple inflammatory non-tubercular enlargement of the gland. But the resisting power of the gland tissues having been lowered by this condition, the gland is peculiarly liable to form a nidus for the growth of any tubercle bacilli which may subsequently be brought to it.

If the source of the irritation be cut off while the gland is in the simple inflammatory or pre-tubercular stage, the gland will almost certainly subside and recover of itself. But if it has already become the site of tubercular deposit, it may spontaneously recover, but is much less likely to do so. Hence the importance of removing any source of irritation early in patients of strumous type.

So vital is this consideration, that I know eminent surgeons who say "as soon as a tooth has become a source of glandular irritation, take it out." The possible preservation and usefulness of the tooth weigh nothing with them against the risk that the glandular enlargement to which it has given rise may become tubercular.

Many dentists will say that an effort should be made to treat the tooth by disinfection, etc., so that it may no longer be a focus of septic distribution, and that then the case should be watched to see whether the glands will not subside.

There are other considerations which "give one pause" in the application of the drastic method of extraction. A large pro-

portion of the cases in this category are children; and in a public post which I hold I often see patients between three and six years of age with the whole of their teeth in a foul and broken down condition, accompanied by some enlargement of the glands of the neck. Any or all of the teeth might be the cause of the glandular swelling, and I am invited to clear out the mouth. That means leaving the child without masticating apparatus during several years of its period of growth—when it is most important that processes of nutrition should be well performed. Of course the teeth in these cases are not in an ideal state for masticating purposes, but they at least form two rows of hard opposing bodies along the jaws, and if they are not painful are infinitely better than nothing to eat with.

Again, whether it is that the tubercular stage supervenes very rapidly on the stage of simple enlargement I do not know, but I have been disappointed in the results of tooth extraction where the glandular enlargement has been of any extent. I cannot lay my hand on the paper, but I think a similar opinion was given by Mr. Bland Sutton in a communication read before a London dental meeting about a year ago.

Before closing I wish to refer to a rather different type of case. Rightly or wrongly the majority of these cases of glandular enlargement are supposed to be due in the first place to some "source of irritation." This is a somewhat vague term, and the books do not say whether a thing which may be a source of irritation to the individual is necessarily a thing which can cause enlargement of a gland. If by "source of irritation" is meant a septic focus from which lymphatic absorption takes place, the action of such an influence is plain enough; but there are cases in which it would seem that irritable teeth can cause glandular enlargement in a strumous subject without their being foul or septic in any way. It is not conceivable that a tooth with a living sensitive pulp can be a septic focus; and as there are no lymphatics in the pulp, the channel for absorption is not apparent unless disease has progressed further, at least to the stage of death of the pulp and septic periostitis of the socket; yet the following case is interesting in this connection.

Patient about thirty years of age. One type of strumous aspect. Family history of tubercle, but not markedly so.

Eight or nine months ago two lower bicuspsids, which were decayed, became acutely sensitive to heat and cold. I excavated them, and after removing all decay I found that the cavities, though large and approaching near the pulps, did not expose either, and I filled with amalgam. The teeth were still sensitive to great degrees of cold, but much less so than before filling.

At the time the filling was done the patient noticed one sub-maxillary gland slightly enlarged; now, eight months later, she has three enlarged to a rather greater extent. I know that those teeth are perfectly clean, and that both pulps are alive. They cannot be septic foci, yet the glandular enlargement is slowly progressing.

How can a thing which is not a septic focus cause glandular enlargement, tubercular or otherwise? I believe it is a fact that when a sensory nerve is stimulated there occurs a reflex dilatation of the capillaries of the contiguous parts, and if the irritation be constantly repeated, as by the periodical pain arising from a sensitive pulp, a condition of intermittent congestion can thus be set up in the tissues around, the lymphatic glands among others, and this, in time, may pass into a low type of inflammation, producing enlargement, which will be simple at first, but may become tubercular in a strumous subject. Thus, in considering the effect of sources of irritation, it may not be sufficient to assure ourselves that no tooth is a focus of septic infection, for a tooth which cannot be septic, but which, nevertheless, gives pain, appears capable of setting up the above series of morbid changes.

In practice we are hampered by different motives, influencing us to proceed in different ways. Ought I to have extracted the teeth in the case described? I could not conceive at the beginning how they could be the cause of disease starting in the glands, and even now I can only speculate on the means by which this has come about. Perhaps I should have filled with a substance less conductive of heat than amalgam; but inasmuch as these teeth are clasped by an artificial denture, there was every motive to fill them permanently, if possible, and at any rate the sensitiveness is infinitely less than it was before treatment.

At present I am temporizing, and if the glands do not subside in a few months I shall probably remove the teeth and them also, though operations have to be approached with caution in private practice, when they involve making scars on the neck in young women of prepossessing appearance.

I have treated dentally a considerable number of cases of glandular enlargement, but they have been hospital out-patients, who are difficult to keep under observation for any length of time.

I think that the most useful form which any discussion could take would be a statement by members concerning any cases they may have treated and watched; the extent and duration of the glandular enlargements, the condition of the teeth, what was done in a dental way, what was the effect on the glands, and how long it took to come about.—*Jour. of British Dental Association.*

THE CINEMATOGRAPH IN MEDICINE.

In our issue for September 3rd, 1898, we commented on a suggestion by M. Marcel Baudouin that the cinematograph might with great advantage be employed in the teaching of medicine. M. Baudouin then lamented that the "sinews of war" were not forthcoming to enable him to put into execution his purpose of employing the apparatus in Professor Terrier's laboratory at the Paris School of Medicine, first, for registering the successive steps in operative procedures, especially with a view to demonstrating how far current practice was at variance with theoretical teaching; and, secondly, "in the study of operations called rapid." Dr. Mount Bleyer, of New York, subsequently informed us that he had presented to the French Academy of Medicine a communication on the subject so far back as February 28th, 1895.

The *Indian Lancet* for February 11th of the current year, publishes, however, a translation of a Lecture on the Cinematograph and the Teaching of Surgery (from what source is not mentioned), by Prof. E. Doyen, of Paris. At the meeting of the British Medical Association at Edinburgh, so far back as July, 1898, Professor Doyen actually showed three films on the screen, representing, respectively, the manipulation of his operating table, an abdominal hysterectomy, and a craniectomy. The exhibition was regarded as very satisfactory, and was repeated by request.

The advantages of the cinematograph include not only demonstrations of actual operations to students in such a way that the whole class can see what, at the operation itself, only a few of those nearest can see, but also a means of bringing before the profession in every part of the world the actual work of its great masters in all countries; the preservation to the future of records such as we would gladly have, were they available, of the prowess of the great surgeons of the past; a permanent visible record of the progress of surgery; and, last, but by no means least, the holding up of a mirror to the operator himself, whereby he can be a looker-on at his own work—and "lookers on," as the proverb tells us, "see most of the game." From this he can learn wherein details of technique that have seemed satisfactory are defective, how deficiencies in his method may be supplied, and how redundancies may be lopped off. Professor Doyen states that the hours he has spent with M. Clement Maurice and with his own assistants, studying his technique with the help of the cinematograph, have been of the greatest interest and value to him.

The nurse, too, and the anesthetist can learn much by seeing themselves as the cinematograph makes them appear. Even the general public, Professor Doyen thinks, might materially benefit in these days when all classes of society follow with such keen interest the progress of surgery, by the use of other means of getting information than the absurdly inaccurate and misleading statements that the daily press will continue to spread abroad. "Those who have seen operations as shown by the cinematograph," says M. Doyen, "admit that the calmness of the surgeon, the precision of its movements, and the perfection of the operative technique tend to diminish, rather than increase, the unknown horrors of an operation."

Professor Doyen states that since the meeting at Edinburgh he has added to his collection of films, which will be issued in a few months for use in the teaching faculties, each film being accompanied with a full description, clinical and pathological; and he adds that surgeons who may wish to use the cinematograph themselves, whether in operating or in teaching, are welcome to ask him for any details that may spare them errors or expense.—*New York Medical Journal*.

ROYAL COLLEGE OF DENTAL

NOV 21 1904

EMERGENCY CROWN. SURGEONS OF ONTARIO

As a rule the pulp has been devitalized before the accident has occurred. If not, then it is necessary to resort to heroic measures and with the use of cocaine remove the pulp at once.

Grind the root down to the gum margin, measure the distance from the gum margin to the incisal edge of the adjacent tooth and the width of the space where the crown is missing, select the proper shade and send to depot for a suitable facing, if you have not one at hand. While a facing is being selected, enlarge the root canal to the proper depth and adjust a post of such length that the lower incisors will not strike it as they articulate, and set back in the root far enough lingually so that it will not force the facing out of the line of the arch; flatten slightly the projecting end of the post and roughen the section to be imbedded in the root; fill the root canal with a large, soft, gutta-percha cone; heat the post, grasp the flattened end with a suitable pair of pliers, force it to its place in the root canal and trim away the surplus gutta-percha; slightly roughen with a coarse sandpaper disk the interproximal contact points of the adjacent teeth. The facing should have arrived by this time; grind it to fit properly, roughen the back

on the facing with a carborundum wheel and bend down the pins so that they are at an angle of about 45 degrees to it.

Dry the facing, the adjacent teeth, the post and root thoroughly, mix thickly some of Ames' quick-setting cement—coat the back of the facing and cover the end of the root and post with it, then force the facing into this mass of cement and hold it in position until the cement has set slightly; coat the cutting edge of the lower incisors and have the patient bite, then opening the mouth trim away the surplus cement, clean out the interproximate spaces and contour as you please, but leave the cement adhering to the interproximate contact points to give greater security of retention. By this time the cement is quite thoroughly set and the patient may be dismissed.

The time consumed in this operation should not be more than a half hour, if you are within three blocks of a dental depot, and you may accomplish it in fifteen minutes if you have the facing at hand.—NYMAN, in *Dental Review*.

MECHANICS OF TOOTH PRESERVATION.

The question is often asked, Why is it that gutta-percha arrests decay so perfectly in cases where gold does not? Why is noncohesive gold more preservative than cohesive? They possess no specific virtue. The problem is purely a mechanical one. A gold filling, at its best, is like a cork in a bottle. In using noncohesive gold, we place layer upon layer parallel with the walls of the cavity; a smooth sheet or mat of gold is presented to the walls of the cavity in the best possible condition, and in the best possible position to make a close fit. The manipulation it receives has but little tendency to temper it; it remains soft and pliable. Cohesive gold, no matter how it is packed, covers the walls of the cavity little by little, and under the plunger-point manipulation quickly loses the softness and adaptability imparted by annealing. Each morsel added is independently packed in place; is bent and creased, twisted and crushed, and is forced to contact with the cavity-walls by being especially driven there. Each piece added is an added opportunity for overlapping, balling up, bridging over, and in a thousand and one ways forming minute defects. With the true plastics, the cements and gutta-percha, we have more than a close fit; we have an actual adhesion. This answers the question: It is a mechanical problem.

So far as arresting decay is concerned, so far as assuring immunity from recurring decay along cavity margins is concerned,

that filling is best that most nearly fills the cavity and approaches nearest to perfectly sealing its entrance. Gutta-percha can be made to accomplish both essentials far more readily than can gold, and on that account is a better tooth-saver. It is a mechanical problem.—TRUEMAN, in *Cosmos*.

Correspondence

EASTERN ONTARIO DENTAL ASSOCIATION.

Secretary's Office, Cornwall, July 23rd, 1901.

Dr. A. E. Webster, Editor DOMINION DENTAL JOURNAL.

DEAR DOCTOR,—At the annual meeting of the Eastern Ontario Dental Association, held at Ottawa on the 3rd, 4th and 5th insts., the following resolution was passed with reference to the formation of a dental corps in the Canadian militia:

“Whereas the testimony of the officers and men who returned from the South African war reveals the fact that a great deal of suffering was caused through defective teeth; and whereas the means available for treatment in the medical department provided only for relief at the expense of those organs which bear such important relations to the general health and well-being of the soldier on active service; and whereas an examination of the condition of the teeth of the contingent first sent out has shown that many of the men were unfit for active service by reason of defective dental organs;

‘Therefore be it resolved, that it is expedient and highly desirable that provision should be made in our militia for the appointment of dental surgeons to the forces, who shall be fully equipped and capable of rendering aid to those affected with dental diseases, having in view the preservation of the teeth and the bearing they have upon the general health of the army;

“And that a copy of this resolution be forwarded to the different dental associations, to the Board of Directors of the Royal College of Dental Surgeons of Ontario asking co-operation, and to the Minister of Militia.”

The subject was urged upon the meeting by the Canadian officers who served in South Africa with the Canadian contingents.

Your earnest co-operation is requested to further the advancement of the formation of a dental corps throughout the militia.

Yours very respectfully,

W. B. CAVANAGH, D.D.S.,

Secretary E.O.D.A.

To the Editor of DOMINION DENTAL JOURNAL:

SIR,—Referring to my paper on “Articulation and Occlusion,” as found in the May number of your valuable journal, I wish to give Dr. Robinson, of Morrisville, Vt., credit for originality of certain thoughts formerly presented by him in a paper on the same subject, and as I endorsed his ideas and practised them I find that I inadvertently incorporated them in my paper without giving him credit for them. The paragraphs illustrating the teeth in the act of mastication, and referring to the masticating surfaces being the arc of a circle, instead of a straight line, as represented by Dr. Bonwill, etc., are not mine.

W. M. BRUCE, L.D.S.

Toronto, July, 1901.

To the Editor of DOMINION DENTAL JOURNAL:

SIR,—There was a slight mistake in reporting my remarks at the April meeting of the Toronto Dental Society, which changes the meaning of my observations. I said, and I still say, that I do not believe in cleaning the teeth by the brush, as we ordinarily use it. If it is possible to clean the teeth perfectly after every meal, then I am in favor of cleaning, but I claim that it is not possible to absolutely clean the teeth with a brush, and that it is probable that we do a great deal of harm with a brush.

Another point, I did not say, that the proximate walls should be parallel. I believe that statement was made, but I did not make it. Yours truly,

A. J. McDONAGH.

To the Editor of DOMINION DENTAL JOURNAL:

DEAR SIR,—At the recent convention held in London, Ont., one little matter was overlooked. Votes of thanks may be “trifles light as air,” but courtesy is ever a badge of well-bred people.

The dentists who visited London on the 2nd and 3rd of July last, feel that they owe the dentists of that city a debt of gratitude for the admirable entertainment provided for them. Everything possible was done by the dentists of London to give the outsiders a good time. Several of the visiting dentists spoke to me of the kindness of the London men, and on behalf of these visiting men I wish to say “thank you” to the boys of London. We were “happy to meet, sorry to part,” and will be glad to meet them all again in St. Thomas next June.

A. W. THORNTON.

Dominion Dental Journal

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No. 8.

RECOGNITION OF THE DENTAL PROFESSION.

The public, the learned professions, and the State, are beginning to recognize the dental profession.

The public are becoming more acquainted with the attainments of the dentist and the value of his services. This is shown in many ways. Dentists are being elected to positions of trust in the realm. There is hardly a town in Canada where the dentist is not known as a public-minded citizen, and numbered among the educated men of the community. Heads of families have learned to value the services of the dentist to the comfort and health of their families. In Great Britain the public demand that a dentist shall be attached to all public and boarding schools, or they will not give such institutions their confidence. In Russia the public see to it that the teeth of the children attending the public schools are regularly examined and cared for. Many cities and local corporations of France, Germany, and the United States have compulsory examination and treatment of the teeth of the pupils of public schools.

The learned professions recognize the dentist in allowing universities to grant degrees in dentistry. Every dental college of good standing that so desires may have an affiliation with a recognized university; very many universities have dental departments. These conditions did not always exist, as is well remembered by those in the profession in Canada who were instrumental in gaining university recognition. They alone know the difficulties of bringing about such a professional recognition.

Recognition by the State comes but slowly. Every voter must see the need of legislation pointing towards interfering with so-called individual rights before any action can be taken. There seems to be a false impression as to when the individual should or should not surrender his rights to the community. It is quite clear that the State should protect and care for its people in the broadest sense. In early days people joined themselves together to protect themselves from wild beasts; later people joined themselves together for protection from other peoples; still later, laws were made to protect the weak from the strong in the same community. To-day people unite to protect themselves from disease, as it shown by the laws of sanitation. Individuals must in such cases give up what at first thought might be considered individual rights for the good of the whole. What is the use of preserving one's life if everyone else is dead?

For centuries the State has cared for the health of its armies, but it is only recently that such care and protection has been extended to the civil population in the form of sanitation and quarantine. Within the past year the State has recognized the necessity of caring for the teeth of its armies. The next logical step is for the State to care for the teeth of its people. This step has been taken by many countries. This principle is recognized wherever the public are protected by law against incompetents.

Now, let us see to what extent the State recognizes the dentist in Canada. Every province has a dental law that is intended to protect the public from persons incompetent to practise dentistry. In the face of this fact the Legislature of Ontario, at its last session, passed a bill to grant one Fisher, of Chatham, admission to the senior class in the R.C.D.S., without having to show any previous educational qualification, and what is more, exempting him from some of the final examination. All of this was done with the Minister of Education (who should know that the preliminary educational requirements to enter dentistry are the same as those of medicine, law, arts, or the sciences) as Chairman of the Private Bills Committee. Surely the Dental Act is not for the protection of the public, or Fisher should not have gotten what he did from the Legislature. Let us look at another phase of this subject. The

Hon. Mr. Harcourt, Minister of Education, in speaking before the Ontario Medical Association in Toronto, in June, 1901, said in effect: "That he had been for years intimately associated with a number of the medical profession of Chicago, some of whom were originally Canadians, and some of whom were eminent American surgeons and physicians. On being asked by these American doctors why the Canadian physician stood so high in his profession, he replied that he attributed it very largely to the very high preliminary educational standard maintained in Canada." What about dentistry, and doesn't it matter whether dentists are educated or not? If the Legislature will quit the "private bill business" with regard to dental education, the Hon. Mr. Harcourt will have reason to be just as proud of the education of the dental profession as he is of the medical. Another point: At the last session of the Local Legislature some changes were made in the school law. At that time the dental profession, through some of its members, undertook to supply the Minister of Education and other members of the Legislature with literature pertaining to the care of the teeth of the poor in the public schools of Ontario, with the object of having a clause in the amended school law, allowing school boards, if they choose, to have the teeth of the poor attended. Did the Minister of Education show any interest in this matter or did the Legislature? None.

The State in Canada, so far as the militia or regular troops are concerned, does not know what a dentist is for. In fact the department does not know whether the recruits have teeth at all or not. All they do know is that the troops are often invalidated for reasons that the medical officers can often trace to lack of oral hygiene. Norway and Sweden, Denmark, Russia, Germany, France, Great Britain, and the United States, have recognized the dentist both as a public health officer and as an army officer. Why is it not so in Canada? Dentists are as well educated here as elsewhere. The necessity is as urgent. The trouble is that there has been no organized effort made to educate our legislators. We are glad to see the Eastern Ontario Dental Association take the initiative.

THE dental profession will please take notice that the Eastern Ontario Dental Association was the first to make a move in the direction of organizing an army dental corps in Canada. But no action was taken towards the nationalization of the dental profession of Canada. This was surely an oversight, as the Eastern society would gladly assist in such a meritorious work.

REPORT OF BOARD OF DIRECTORS OF THE R.C.D.S.

The annual announcement of the Royal Collège of Dental Surgeons of Ontario, and the reports of the special and annual meetings of the Board of Directors, have been published and mailed to every dentist in Ontario. The report appears to be a complete business-like presentation of the doings of the Board for the year 1900-01. The business of the Board is becoming of such magnitude and importance financially, legislatively and executively, that semi-annual meetings should be seriously considered. The supplemental examinations are to be adjudicated upon in the fall, and are just as important as the regular examinations in the spring. Many difficult questions as to admission or rejection of students arise at the opening of college. The final adjustment of all college matters can be better done about opening day than six months previously, because conditions often change during the holidays. An increase of the stipend of the Board ought to receive consideration. The remuneration should be such that the members would not feel that every day they spend in doing the business of the profession is a loss to themselves personally.

The reports show several very important changes. 1st. By an arrangement with the Victoria Hospital, students of the R.C.D.S. receive special surgical clinics, as well as having the privilege of seeing the clinics in general surgery. 2nd. The Board has spoken favorably of the formation of a Dominion Dental Council. 3rd. The course in Dentistry in Ontario, after May, 1902, will be four years. 4th. The reports of the Dean and Secretary shall be typewritten and sent to the members of the Board a week before the annual meeting. 5th. That an effort be made to direct the attention of the dental students of the provinces of Canada other than Ontario to the advantages of taking their professional course in the Royal College of Dental Surgeons of Ontario. Just how the Board intends to get the attention of intending dental students outside of Ontario is not specified. There is no provision made for advertising.

STILL THEY SELL DISTINCTION!

Below is a copy of the blank form for dentists to fill out and the objects of the St. Luke's Hospital of Niles, Michigan, also the circular letter. It speaks for itself. The Foreign Relations Committee of the Faculties Association and the United States Government have another little job ahead of them. Let us all watch for the man who "judiciously displays" his St. Luke's Hospital membership ticket or button.

ATTENTION IS CALLED TO THE FACT: That after your Certificate of Membership there will be no more fees of any kind, no annual dues, no assessments; in fact, it is a life membership.

DENTISTS' APPLICATION

TO BE PLACED ON THE

Staff of St. Luke's Hospital, of Niles, Michigan

(Incorporated under the State Laws of Michigan, 1898.)

CAPITAL STOCK, \$100,000.00.

The Hospital is for the Use of the Surgical, Medical and Dental Profession.

To ST. LUKE'S HOSPITAL, NILES, MICHIGAN:

Please state
whether you want
your Certificate in
English or Latin.

Please place my name on your Staff as one of the CONSULTING
AND VISITING DENTAL SURGEONS TO ST. LUKE'S HOSPITAL.

Name in full

City State

Specialty

Name your College or Dental Examining Board

Certificate of Membership in English or Latin?

Year of graduation or registration 18

NO LIABILITY WHATEVER IS ATTACHED TO SIGNING THIS APPLICATION FORM.

Dentists who are in active practice will be appointed upon our Medical and Dental Staff.
We shall be pleased to enroll your name as such upon our record book.

It will bring you
prominently
before the general
public to belong
to the Staff
of
St. Luke's Hospital.

... OUR OBJECT ...

Is to obtain a large and increasing membership to our present
Staff of Physicians and Dental Surgeons. This membership
is selected from the most successful and skilled practitioners, whose
various modes of treatment are attracting the personal attention of
the general public.

THE LIST OF MEMBERS WILL BE CLOSED SHORTLY.

Please fill in this application form, returning it to us by early mail,
and we shall take pleasure in placing your name in good standing
upon the Medical and Dental Staff of our Hospital, entitling you to
all the advantages and financial benefits of membership.

Kindly select and mark with a cross thus: X, right over the priced certificate you desire to have sent, and remit us in advance the amount, together with this application form properly filled out, and we will have your certificate safely sent you by return mail. Should you prefer it, we will send your certificate through any bank you may name, postmaster, or via American Express, C. O. D., you to send us \$2.00 in advance, to apply on your account as a guarantee of good faith that you will promptly take your certificate from the bank, post or express office when it arrives. If you remit us in advance you save this extra expense and delay.

These certificates are artistically lithographed (size 19 x 25 inches) and set forth that the holder has been regularly appointed to the honorable ranks of **A Member of our Staff of Medical and Dental Surgeons.** These certificates are a great attraction to any dentist's office. All the members of our Staff are delighted with them and say that they impart confidence to their visitors and patients. They are truly a beautiful illustration of the higher art of the lithographer, and any dentist ought to be proud to have one framed and hung upon the wall of his reception or operating room. It is something that increases the practice of the dentist and wins him many dollars during the course of a year. These certificates will be delivered free in tubes by mail, and furnished as follows:

Heavy Royal Linen Paper, \$5.00. Imitation of Parchment, \$7.50. Genuine Sheep-Skin, only \$10.00.

We send out all of our certificates with your name handsomely engrossed thereon in Old English or Round Hand style of letters, with two pieces of dark blue ribbon and a large corporate gold seal affixed thereto, giving it the general appearance of a regular Hospital Medical or Dental College Diploma.

N.B.—The amount received from these Certificates of Membership is devoted entirely to the general expense of maintaining the Hospital for the benefit of all concerned.

Date of Certificate of Membership

NILES, MICH., June 12th, 1901.

Dr. C. W. F. Lennox, Toronto, Ont.

DEAR DOCTOR,—We enclose you herewith some of our literature for your careful perusal, together with a dentist's application blank for you to fill out and return to us, should you wish to join our dental staff.

The many advantages, privileges and financial benefits to be gained by your joining us, are briefly and partially told as follows, viz.:

1st. We issue, in addition to our certificate, a neat lithograph pocket membership ticket, which we believe, if displayed judiciously, will pay for your certificate many times over during the course of a year. Should you want only our pocket membership ticket alone, it will cost you \$2.00; otherwise, it goes free with the certificate of membership.

2nd. We have just received a very costly and ornamental red cross solid gold button from the wholesale jewellers, lettered in circular form: "Staff St. Luke's Hospital," which goes free with our new membership, or if ordered alone, \$2.00.

3rd. We will pay you a commission of 25 per cent. in cash for all surgical operations, and ten per cent. on all medical cases you may send to our hospital for treatment.

4th. Should you wish to consult us at any time regarding difficult cases, we will freely give you whatever assistance and advice we can, and will make microscopical analysis of specimens sent us free of charge.

5th. We charge nothing for nursing patients, day or night, as part of the expense is taken from our nursing fund. We do charge, however, for board and rooms, ranging from \$1.50 to \$2.00 per day, according to location selected by the patient.

6th. After you have ordered and paid for the certificate of membership, *either in English or Latin*, should you so desire it, and will send us a list of names, not exceeding twelve, including your local newspapers, we will write an individual letter recommending you to each one of them. Of course these letters of endorsement are optional for you to accept or reject, whichever you see fit.

Now, Doctor, after considering all these strong features, we would ask with all fairness, Do you not consider it to your financial interests to have your appointment confirmed? Kindly let us hear from you as soon as possible, and greatly favor,

Fraternally yours,

ARTHUR C. PROBERT, M.D., D.D.S.,

President.

WHEN SHOULD THE ONTARIO DENTAL SOCIETY MEET?

The Ontario Dental Society, for a number of years, held its meetings in the summer, following the example of the large associations in other countries. The attendance at that season of the year was usually from twenty to sixty. For about four years the meetings were held in February, and the attendance increased gradually until the 1900 meeting registered one hundred and fifty members. In the spring of 1900 the Board of Directors of the R.C.D.S. directed that there be no Ontario meeting that year, but instead that there be held three meetings in July, 1901—one in London, one in Toronto, and one in Ottawa, and that they (the Board) would supply two specialists to give instruction in crown and bridge-work and orthodontia, the meetings to be under the direction of the local societies in the three places mentioned. The object of the Board was to make it convenient for those in western and eastern portions of the province to attend and receive stimulation and instruction in two subjects of more or less recent introduction. The wishes of the Board were carried out most faithfully by the local societies. A good essay and clinical programme was presented in each case, besides that supplied by the Board. The meetings were held within one hundred miles of fully six hundred dentists. The specialists engaged by the Board were men of well-known ability. What was the result? There were fewer in attendance at all three meetings together than usually attend the Ontario Dental Society meetings held in Toronto in February. It would appear from the history of the society that February is the proper time for it to hold its annual gatherings.

ORIGINAL RESEARCH IN DENTISTRY.

The General Medical Council of Great Britain annually sets apart a thousand pounds to stimulate original research in medicine and allied sciences. Grants may be obtained on application, as is shown by the following letter. Has the time arrived when the Board of Directors of the Royal College of Dental Surgeons of Ontario should stimulate investigation by money grants or otherwise?

LONDON, June 21st, 1901.

Dr A. E. Webster, 93 College St., Toronto.

DEAR SIR,—In reply to your letter of the 11th inst., applicants residing in the colonies are eligible to receive grants for scientific research. Applications for investigations pertaining to dentistry are acceptable. I am, Yours faithfully,

GUY ELLISTON,
Asst. Secretary.

Editorial Notes

DR. PERCY FIELD will practise in Brussels, Ont.

DR. O. A. MARSHALL, who once practised in Picton, is now in Huntsville.

HAMILTON was represented at the Toronto meeting by only two or three dentists.

DR. GEO. PALMER, of Toronto, has gone west for a trip, to extend over several weeks.

THE Journal will be very pleased to publish any news items that are sent to the editor.

DR. T. E. GALLAGHER, en route to South America, reports a very pleasant trip. He arrived June 20th.

DRS. A. B. C. Dando and J. A. Shannon, of Sault Ste. Marie, were present at the clinics in London and Toronto, July 3rd and 4th.

DR. WALLACE McLAREN, Royal College of Dental Surgeons, 1901, has entered into partnership with Dr. Keown, of Moosomin, Assa.

It is up to Goderich, Windsor, Mitchell, Stratford, Berlin and Guelph, to explain why their dentists do not attend dental conventions.

DR. MILLS, of Brantford, showed some very ingenious and original devices for retaining partial dentures at London meeting, a report of which will appear later.

DR. G. V. BEACOCK, of Brockville, writes in the *Brockville Recorder*, very strongly condemning the use of vaccination as a means of preventing or curing smallpox.

DR. G. A. FEE, of West Superior, Wis., who is an old Canadian boy, gave a very interesting clinic on a large contour gold filling at the London convention, July 3rd.

It was stated at the recent Toronto meeting that the reason why some of the old stalwarts were not present was because the meeting was not conducted by the Ontario Dental Society.

SOME one said that Dr. Moyer, of Galt, told the best stories at the London meeting, but Dr. Thornton doesn't think so. It may just be possible that the dentists of Chatham have ambitions in the same direction.

BRANTFORD has a dental society. President, Dr. D. Watson; Vice-President, Arnold Marquis; Secretary, Frank Britton. Meetings are held the second Tuesday in each month.

THE Board would like to know why Owen Sound, Orangeville, Collingwood, Barrie, Orillia, Peterboro', and Oshawa, do not appreciate their efforts in running dental conventions.

AT the Dominion Bowling Tournament, held in Toronto, July 10, 11, and 12, Kincardine won the Walker trophy. The club was skipped by Dr. Bruce. We are all proud of you, Doctor!

DR. W. B. AMY, Royal College of Dental Surgeons, 1900, has bought the practice of Dr. Sipes, cor. Gerrard and Sherbourne Sts., Toronto. Dr. Sipes has gone to California for his health.

COMPOUND softened and placed in the threaded ring for attaching a gas jet is a much better material, when hard, into which to swadge *fac-simile* crowns than lead.—DR. MILLS, Brantford.

DR. STEWART MILNE, cor. Gerrard and Yongé Sts., Toronto, sailed for Rome, Italy, the latter part of June. After visiting Germany, Switzerland, France and Great Britain, he will return *via* Montreal.

THE vacant lot west of the Dental College building in Toronto is for sale. The Board should ask the students what action should be taken. This is not a jest, because it is the students' money that will pay for it if it be purchased.

DR. J. J. MCKENZIE, Prof. of Bacteriology and Comparative Dental Anatomy in the Royal College of Dental Surgeons of Ontario, is taking special courses in Berlin and London, Eng., during his summer vacation.

DR. CHAS. E. PEARSON, of Toronto, sailed for England, Aug. 24th, *via* New York. Dr. Pearson had the honor of presenting an original communication and making a demonstration at the annual meeting of the British Dental Association, held in London, Aug. 3rd to 6th, 1901.

ANN ARBOR UNIVERSITY will grant the degree of D.D.Sc. to its graduates who complete a course of one year's study or research in the laboratories of the college. Only those who have taken a creditable course for D.D.S. will be allowed the privileges of the graduates' course.

DR. A. E. JAMISON, who attended a course of lectures at the Royal College of Dental Surgeons last year, and took the final examination, is now located at Lacombe, Atha., about a hundred miles north of Calgary. Dr. Jamison was successful in passing the examinations in the Territories.

DR. J. B. WILLMOTT, Dean of the Royal College of Dental Surgeons of Ontario, attended the National Dental Faculties Association, held in Milwaukee, August 1st, 2nd and 4th, as representative of the R.C.D.S. For years Dr. Willmott has been chairman of the Executive Committee of the Association, which necessitates his reaching the place of meeting one or two days before the regular sessions are opened. This year there were complaints against one or two schools that had not lived up to the canons of the Association, to be dealt with in committee.

ON Wednesday afternoon, July 3rd, at the close of the convention held in London, there was formed the Western Ontario Dental Society. Dr. H. R. Abbott, of London, was elected chairman, Dr. A. W. Thornton, of Chatham, Secretary, and Dr. W. J. Fear, of Aylmer, Treasurer. The first regular meeting of the Society will be held in St. Thomas in June next. Dr. E. A. Tesky, Dr. Chas. Fitzsimmons, and Dr. G. T. Kennedy, all of St. Thomas, were appointed a Programme Committee. The chairman, secretary, and treasurer, together with the Programme Committee, forms the Executive Committee for the time being.

DR. W. A. STEVENS, Chicago, President of the Illinois State Dental Society five years ago, said at a recent meeting that out of twenty-four colleges in the National Faculties' Association five years ago, there was not a college graduate in any of them and few had High School graduates. This statement is not correct, so far as the Royal College of Dental Surgeons of Ontario is concerned, because there has not been a time since 1892 when there were not from two to six college graduates in the classes, besides a good number of others who had been from one to three years in college. For the past three years no student could enter the Royal College of Dental Surgeons who had not matriculated in some recognized university, which is, and must be, equivalent to High School graduation.

THE London dentists have the proper idea of running a successful dental meeting. They not only provided at their recent gathering an excellent essay and clinical programme, but also a splendid evening's entertainment at Springbank and the County Club. They even went so far as to have an electric dis-

play for their guests. The programme was carried out to the letter, and the visiting dentists were made welcome on every hand. Every visiting dentist went away feeling that he had a good time, and wished for an opportunity to so express his feelings to the society, but no provision was made on the programme for the reception of congratulations, hence the society must not think that their efforts were not appreciated; the difficulty was for an opportune moment in such a full programme.

THE Canadian Medical Association will hold its annual meeting August 28-31, 1901, in Winnipeg, obtaining a railway rate of single fare from all points in Canada, besides stop-over and side trip privileges at the same rate. Why was not the Dental Society of Western Canada held at the same time, so that advantage might have been taken of the reduced rates? The journal suggests that during the next meeting of the Canadian Medical Association that representative dentists from the various provinces meet and organize a Dominion Dental Association. The medical profession would be pleased to assist such an organization, because it would help towards the nationalization of the professions, a principle to which they are committed. The maritime provinces have already organized, having in view the larger organization, likewise the West. Ontario and Quebec think it is a good thing, but do nothing. They want a brick to fall upon their heads to wake them up, so that they may go to sleep right. Sleep is a good thing if indulged in under proper circumstances and in moderation.

Review

Interrogations in Dental Metallurgy.

This little book contains three hundred and fifty-eight questions on dental metallurgy. The questions are supposed to cover a full course in the subject suitable for dental students. The idea is an old one, but none the less good, if used in the proper manner. The trouble is that some bright student with commercial instincts will have the answers to the questions published and for sale, so that the result is the same as the objectionable "quiz compend." Notwithstanding this difficulty, no teacher of dental metallurgy should be without these questions, if for no other purpose than that of a systematic guide in teaching. There cannot be too many aids to systematic work.

NEW CENTURY IDEAS.

The Toronto Exhibition, to be held from August 26th to September 7th, announces that its principal characteristic will be the adoption of New Century Ideas. The phrase might be considered a bit indefinite but for the fact that contemporaneously the statement is made that there will be daily and nightly displays of all the new weapons of war, as well as recent developments in the arts of peace. The pom-pom will be on view, wireless telegraphy will be shown in practical use off the shore to passing vessels; magnificent displays of illuminating effects will be made; recently announced developments in electricity will be shown; demonstrations will be made in the cultivation of the sugar beet; modern methods of rescuing at sea will be illustrated; manœuvres with latter-day artillery will take place, in fact the military will be very much in evidence in all its branches, while the handy man and the marines will also be used largely in the off-shore operations and the brilliant nightly spectacle, the Bombardment of the Taku Forts by International Forces. An International Military Tattoo will be the feature of the opening night, when a large body of troops will be utilized. A strong exhibit of French-Canadian cattle, as well as of Pan-American live stock, is to be made. In fact, in the live stock, dairy products and manufactures, Toronto Exhibition never promised so well as this year. Greatly reduced rates on the railways and steamboats have been arranged for, and no better time for visiting both Toronto and the Pan-American or the former alone, could be desired than between August 26th and September 7th. When it is stated that this year Toronto will distribute upwards of \$35,000 in premiums, and spend \$30,000 in special attractions, all of which can be seen from the grand stand for 25c., the magnitude of Canada's greatest exhibition will be appreciated.

BLEACHING.—I find that the easiest way to use peroxide of sodium in bleaching is as follows: After the cavity is cleaned and *dried*, wet it carefully with distilled, *boiled* water and then with a white pine stick whittled to a long, slender point, flat sided, carry the dry powder into the cavity slowly and watch the result. Keep on feeding the cavity until the interior begins to be frothy. Keep this up until the tooth is bleached. (This will take about thirty minutes.) Fill the cavity, after washing carefully with carbonate of soda water, 1 to 100, and then pack it with precipitated calcium phosphate (Bulkely) until the whole interior is well lined with it, using distilled water to make a paste. Afterward fill with any kind of cement too or three shades whiter than the tooth and cover the filling with gold.—Editor *Dental Review*.

Dominion Dental Journal

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No. 9.

Original Communications

POPULAR DENTAL EDUCATION.

BY MARK G. McELHINNEY, D.D.S., OTTAWA.

Read before the Eastern Ontario Dental Association.

Mr. President and Gentlemen,—Your indulgence is asked while reference at length is made to a subject which has for some time past been developing itself in the mind of the writer.

Some years ago it was my privilege to read before you a paper upon this subject, which effort you were kind enough to receive with every mark of approval. Recent developments in connection with our College have suggested a train of ideas which may be of interest to the profession. When considering in a previous paper the subject of "Popular Dental Education" the possibilities which will now be brought before you were not thought of by me. It was not until reading the report of the Board of Directors that it became evident that as a profession we were wasting valuable time and passing by magnificent opportunities.

Such is the financial prosperity of the Royal College of Dental Surgeons that care has to be exercised to prevent the accumulation of a surplus. In order to dissipate the inevitable income, it has been decided to furnish clinics at the various dental conventions in order that the dentists of Ontario may have an opportunity of seeing and hearing the latest and best regarding the performance of their professional duties. This is an excellent idea on the part of the Board, and one which the writer would

not care to underrate. It is my opinion that if the people could be educated to avail themselves of our best services as we have them, it would be a matter of great public value.

The ignorance respecting dentistry, especially in its wider bearing upon the health and comfort of the individual and of the masses, is simply appalling, even amongst those whose position and attainments would lead one to expect better. The text of this paper, a text which the writer wishes to impress upon you is this: That a part of our surplus funds be used to conduct an organized campaign of popular dental education. Education of this nature is a worthy object whether considered from the standpoint of public weal or from that of the dental practitioner. Such knowledge would add to the health and comfort of the people, for they would be better able to use and preserve their dental organs. Such a campaign, if properly carried out, would in a year cause an appreciable addition to the practice of every reputable dentist in Ontario. Such a campaign would give so fatal a blow to quackery and cheap-jack business that it could no longer exist in this province. Unprofessional dentistry lives and thrives upon the ignorance of its victims. Lessen the ignorance, and the parasite will die for want of nourishment.

When the claim is made that reputable practices could be materially increased, it is made with the careful consideration of the fact that dental education of the masses is a sort of advertising. Advertising pays, and pays well. Whatever one may think and say regarding it, the fact stands out clearly that advertising is a tangible thing, and something that brings results in proportion to its extension. The ethical status of an advertisement depends upon whether it is truth or a scheme to catch the unwary.

There is a legitimate method by which the professional man may bring himself before the public. Many of us have at times indulged in it, but its sporadic nature and small extent made the results very uncertain. That the scheme here presented to you is legitimate no one can deny, for it is strictly educational. It is the application of the principle of the centralization of effort to a whole profession, each member of which is bound to receive benefit. It is a large, a comprehensive scheme, by which the whole province can be thoroughly instructed in the value of the dental organs; a scheme the cost of which falls upon no few individuals, while the benefit accrues to every practitioner in the province.

The careless selfishness with which many dentists are turning out students fills the college and eventually swells the professional ranks inordinately. Let the funds from the college so

enlarge the field that there may be ample room for all of its graduates. Regarding the *modus operandi* of this propaganda, a special committee from the Board of Directors, together with such others as might be appointed by the president, could select the best obtainable popular essay on the subject. They could open a competition to the dentists of Ontario and select the most suitable. This essay must be in no wise technical, but must present the case in the simplest and briefest manner that will cover the required ground. It should be well printed on good paper, bearing the authority of the College and the name of the author—which is his due in any case—and distributed in every city, town and village in proportion to population. Undoubtedly the dentists in each place would attend to the proper distribution of the literature. In addition to this, one or more practitioners in each place might be selected to deliver lectures, the lecturer to be properly paid in each case. In six months every adult in Ontario would be in possession of a copy of the pamphlet, and many of them would have heard lectures on the subject. The results will be such that every reputable dentist in Ontario will rejoice that he is a member of the Royal College of Dental Surgeons, and every unprofessional practitioner will wish that he had never been born.

The writer is aware that this scheme in its entirety is a new thing, a daring thing, and that it may have to face strong opposition. Some of the ablest men present at the Eastern Ontario Dental Association meeting last June at Ottawa were favorably disposed toward it. The conditions under which this scheme is proposed are unique. The province is apparently over supplied with dentists. The College is filled with students, and is fast accumulating a surplus which the directors fear may not be a desirable thing to have. Excepting provision for a rainy day, the College is better without a large fund.

A crowded profession, a full college, a growing surplus, and a public that does not recognize the vast importance of the subject in its bearing upon health and comfort—does it not seem most reasonable that this public, so large a proportion of which suffers for the proper dental services, should be placed in closer touch with this overcrowded profession. The result would be more call for the services of the dentist, and a great improvement in the health and comfort of the community.

Some of you may look at this idea as quixotic. Is it not along the lines of all great enterprises at the present day—centralization of effort—the highest ideal of industrial development?

The medical profession accomplishes this object in part by its official connection with various departments of the State, its

continual appearance in the press, its round of lectures on hygiene and kindred subjects, and its magnificent literature. We, as dentists, have no official part to play; our operations are never recorded in the press; we have few popular lectures, and our literature is mostly technical. We, belonging to a profession requiring specialists of a high order, are compelled by the circumstances under which we labor to assume a hole-in-a-corner existence which is detrimental to ourselves and to the public good. Here is the opportunity for the profession in Ontario to achieve a great work. The funds are available, the men who are capable of efficient service are both on the Board and outside of it. The time is ripe for a *coup* unrivalled in the history of the profession. Let us seize upon this opportunity and place the profession of dentistry in Ontario far ahead of any other organization of a similar nature in the world.

Thanking you, gentlemen, for your kind attention, I leave the subject to your consideration.

PRESIDENT'S ADDRESS TO THE DENTAL SOCIETY OF WESTERN CANADA.

BY R. R. DALGLEISH, D.D.S., WINNIPEG, MAN.

Read before the Dental Society of Western Canada.

To the Members of the Dental Society of Western Canada:

GENTLEMEN,—To open our Association to-day I find a more pleasing task than I did a year ago when we assembled for the purposes of organization. At that time we were all more or less anxious as to the result of our coming together. However, that anxiety was of short duration, for we found a most hearty response not alone from the dentists of Manitoba, but also from the sister provinces, and we had a grand good time together. Nothing but success could attend such spontaneous effort, especially when the object aimed at was the common good of all.

But that gathering was not alone productive of closer and more brotherly relations among the members of our profession which (though highly desirable and commendable) is after all but a secondary matter in such meetings; it was intensely practical and helpful from an educational standpoint. We were honored by the presence of Drs. Weeks and Ourie of Minneapolis, two men eminent in the profession of dentistry, and very much of the success of the meeting was due to their kindly assistance.

We had a number of papers also from our own members, each excellent in itself, and all tending to prove by the breadth of ability with which the subjects were handled that we have men in our society who can not only write good papers on a given subject, but who are equally capable of discussing and practically demonstrating the thoroughness of their grasp of our profession.

During the year since we last met the Empire has sustained the loss of the grand and good woman who for more than sixty years ruled with such conspicuous ability over the greatest Empire the world has ever seen. The passing of formal resolutions of regret become almost meaningless by constant repetition, and yet it would be unseemly for any annual gathering of a profession devoted to the comfort and amelioration of the race without our pausing for a moment, with uncovered heads, to render thanks for the great life thus closed, while we remember with deep gratitude all that she did to foster learning and advance science in all its branches. It is well also at times like these to compare the standing of our profession at this, the beginning of a new century, with what it was at the beginning of Victoria's reign, and in this way, dimly at least, realize what strides the world has made in the past sixty years, and then to repeat with unabated loyalty, "long live the king," to follow in the footsteps of his royal mother.

Our present programme is, if anything, more interesting than the one of last year, and we are proud to welcome to the Queen City of the West so distinguished a brother as Dr. Johnston of Chicago, a Canadian by birth, who has won not alone fame for himself, but for American dentistry the world over. Dr. Johnson has come here at great sacrifice to be with us, cancelling previous engagements with other societies. Dr. Johnson was then called to the platform, and addressed the meeting.

ABSCESS OF THE ANTRUM [OF HIGHMORE.

BY B. J. CURRY, D.D.S., L.D.S., WINNIPEG.

Read before the Dental Society of Western Canada.

The antrum of Highmore should be considered as one of the most important structures of the face, owing to the many distressing affections to which it is subject. Many of these troubles are not particularly noticed by patients themselves, but yet they bear an important relation to chronic conditions, catarrhal and otherwise, which render life miserable.

For the purpose of general study, we might with justification assert that there are but two sources of trouble to be found in this cavity: firstly, lesions secondary to diseases of the teeth; and secondly, lesions common to the mucous membrane, wherever situated. We of the dental profession study it more particularly in connection with the lesions connected with the teeth, and those suffering might use the old saying, "Protect us from our friends," which is particularly applicable here, yet we should, before interfering with the teeth, investigate the other surrounding conditions and ascertain whether or not they may be the cause of the trouble.

The chief causes are as follows:

1. Mechanical violence to the face or superior maxillary bone in the vicinity of the antrum.

2. Diseased teeth or roots causing abscesses which break into the antrum, although the roots of the teeth are really not in the antrum, they are only covered by a thin layer of bone, periosteum and the mucous membrane lining the cavity. Therefore, when roots protrude into the antrum, as already described, the covering over them being extremely thin, becomes liquified, when there is an irritant at the end of the root, which sets up so violent an inflammation as to result in the formation of pus, which collects in the antrum and which may be discharged through the nasal opening.

3. Catarrhal conditions of the nasal mucous membrane may grow to the mucous lining of the antrum, and cause the opening to be closed, and thus prevent the secretions from escaping, and the process of putrefaction takes place, setting up inflammation and thus leading to the formation of pus.

4. Exposure to cold may also cause an accumulation by closing the opening of the nose which leads into the antrum.

5. Lastly, the presence of foreign bodies, as flies, etc., which act as irritants and hence inflammation and the formation of pus.

The symptoms of antral abscess—an accumulation of fluid in the antrum—gives to the patient a sense of weight and lack of resonance in speaking on the affected side, and is associated with more or less indefinite pains, which have a throbbing sensation in the acute abscess, while in the chronic stage may be absent or else only a slight aching or burning sensation, which is more noticeable if the patient is in a cold wind. When the opening into the middle meatus of the nose is closed, there is a bulging out of the walls of the antrum, which is absent if the opening is free. In this latter condition, if the head is thrown toward the side which is not affected, a few drops of fluid will escape into the nasal cavity.

The diagnosis of antral abscess is frequently somewhat ob-

scure, and consequently a positive conclusion can rarely be arrived at upon first examination. The presence in the nasal cavity of pus of a creamy color, and possessing an unpleasant aromatic odor, while the other nasal cavity is free, is always sufficient to induce the impression that suppurative disease exists in one or another of the accessory sinuses, namely, frontal, ethmoidal, antral or sphenoidal.

The neuralgias which arise from such trouble are not of much diagnostic value, and yet there is an uncomfortable feeling, a sensitiveness and a tenderness of the affected jaw in closing the teeth during mastication, which sometimes arises from antral disease, but not from suppuration of the other sinuses.

Supposing, then, from the data obtained that we have good reason to believe that the trouble exists in the antrum, and not in the other sinuses, and yet we are still a little in doubt, we should examine with an electric mouth-lamp all the contiguous teeth in order to see if any of these have a dead nerve. Another good method is to place the lamp high up against the palate or in the nasal fossae, thus throwing a light through the antral cavity, and we then can judge from its opaqueness or translucency whether or not it is the sinus affected.

The methods of treatment are as many and varied as are the rhinologists themselves, each asserting his own to be the best, yet they all agree that the essential features of the treatment of a case of suppurative disease of the antrum consists in the opening of the cavity for proper drainage and the subsequent thorough cleansing and disinfection; all agree in the latter, but differ in the methods of opening the cavity for proper drainage.

The following are some of the best methods:

1. Cooper's method, which is most commonly used, by removing a tooth or root as the case might present, and opening into the antrum through the alveolus. When the teeth are sound, however, he suggests perforating the antrum through the roof of the mouth in close proximity to the teeth, either between the second bicuspid and first molar, or between the first and second molars. The fact that the opening into the alveolus at floor of the antrum and the ostium maxillare at the opposite ends of the one cavity must be conceded as an advantage for purposes of irrigation, while the facility it affords for auto-irrigation should never be lost sight of. To keep the artificial opening clear, various silver and gold appliances may be devised for permanent insertion during the period of treatment. The tubes may be attached to the adjoining teeth by gold or silver clasps, and plugged to prevent the entrance of food. Solutions of boracic acid, listerine, or H_2O_2 may be used to cleanse the cavity. At the first washing the discharge is

purulent, fetid, and sometimes carious, but before the irrigation is over the fluid returns from the nares perfectly clear. On each succeeding washing the pus decreases in quantity. After a number of irrigations nothing comes away but a mass of gelatinous, mucous pus, the water itself being quite clear. At each sitting the mass discharged becomes smaller and smaller and finally disappears and the patient is cured.

Jourdain advocates making an opening through the inferior meatus into the antrum, on the principle that the antrum communicates with the respiratory passages and not the digestive, and therefore the natural opening will be by the nose. He uses a 15 per cent. solution of cocaine to deaden tissues, and then uses a trepan and cannula, leaving the cannula in during the washing. This method is not so popular owing to the thickness of the naso-antral wall, and also insufficient drainage, and the impossibility of personal irrigation by the patient, and the evil effect of the cocaine.

Desault's plan is by perforating the antrum near the canine fossa, which has the advantage of saving the tooth if sound, and also admits of self-treatment. The cleansing process being similar to preceding methods.

These cases often take weeks and months to cure. In such protracted cases search in the antrum for dead bone, and remove it; but if there is no irritant, then use some form of stimulating injection—nitrate of silver 3 to 5 grs. in $1\frac{1}{2}$ H₂O, but only to be used once in one or two weeks; but 1 grain in $6\frac{1}{2}$ H₂O may be used once a day. Carbolic acid, or H₂O₂, may be used, but never let the patient inject the stronger solutions or any of the above, but do so yourself. Patients of strumous or consumptive diathesis are not so amenable to treatment as are strong, healthy patients, and we often find the cases extending over a period of months, and even years. A few cases can be cured quickly, entirely relieved, but treatment requires to be carefully, systematically, and persistently followed to obtain a good result, and often the routine has to be changed and more direct efforts applied, and even then a complete cure does not always follow. The following is a brief description of cases which have come before the writer's notice for treatment.

CASE 1.—During August, 1899, a French lady, Mrs. St. L., a hotelkeeper's wife, about 45 years of age, presented herself at my preceptor's office in Ottawa to have a lot of roots extracted in order to have a denture made. I proceeded to extract the first molar, but owing to the diseased condition of the mouth and jaws, I found that the floor of the antrum came away quite easily, along with the adjoining teeth, and was followed by quite a large quan-

tity of pus of an extremely disagreeable aromatic odor, which had evidently been retained for some time in the antrum. Being an undergraduate at the time, I was somewhat alarmed at what I had done, but after washing the cavity out several times with boracic acid the tissues healed over and no further trouble resulted.

CASE 2.—Winnipeg, December 8th, 1900. A gentleman, Mr. B., an American of French extraction, about twenty-seven years of age, a student of a sedative disposition presented himself for treatment to have a chronic abscess treated in a second bicuspid tooth, which had been troubling him more or less for five or six years. I drilled into the root, which had been filled with some preparation containing iodoform, and seemed to be in good condition. I then injected, by means of a hypodermic, some warm water in through the fistulous opening, which was over the first molar. I injected a second syringe full, and found that the water along with some pus came out through the nose, and upon turning the head over toward the unaffected side more water and pus came away. I concluded then that the antrum was in a suppurative condition, and upon questioning I found that he had often felt a dull pain over the affected side, also a feeling of heaviness and tightness, and often found traces of pus on the pillow in the morning. Owing to the odor of the pus, he concluded he was suffering from some catarrhal affection. He came every morning to have it treated, and I tried syringing it through the fistulous opening with solutions of listerine boracic acid, and H_2O_2 , but it did not seem to improve, and he still complained of the bad odor which came away from the pus, which occasionally found its way into the nasal fossae. I then concluded to extract the second bicuspid root, which carried a crown. This I did, and then, with a large bur, made a large opening posterior and a little towards and between the roots of the first molar, thus securing easy access to the antrum for purposes of cleaning. I then made a silver drainage-tube and fastened it with clasps to the first bicuspid and first molar, and proceeded to thoroughly syringe it out with solutions of boracic acid and H_2O_2 . I used an ordinary large water syringe, but I soldered the end and drilled a number of fine holes in around the point, which thus forced the wash against the sides of the cavity. I treated it regularly now every morning until about the end of January, when I saw marked signs of improvement. I then treated it about three times a week until the end of February, when very little, if any, pus came away. I now treated it about once a week for about three times, using, in addition to the former wash, a weak solution of tincture of iodine. The last couple of times no pus came away, so I concluded to leave it for a while, and removed the drainage tube, and

he came in on April 10th, as he was leaving the city, his term at the business college being over. During the interim he had felt no inconvenience, and the opening had quite healed over.

CASE 3 (which did not give very much trouble).—Winnipeg, February, 1901. Mr. G., a young man of 28, a bookkeeper, presented himself for treatment, as he said there seemed to be a piece of bone coming away over the first and second molars. Upon examination, I found quite a large piece of carious bone, which I removed, and found quite a large opening leading into the antrum, and a large quantity of pus lodging in it. As the opening through which I removed the dead bone was about the size of a lead pencil, I had no trouble in cleaning the antrum out. Through the nasal fossae I syringed the outside cavity with a weak solution of nitrate of silver, and packed it with absorbent cotton, on which I put a little oil of cloves. About the middle of March, as there was no more pus coming away, I ceased washing it and found that the outside cavity over the teeth had filled up with tissue and healed over quite readily, thus effecting a cure.

THE CARE OF CHILDREN'S TEETH.

BY DR. A. L. MCLACHLAN, D.D.S., CARMAN, MAN.

Read before the Dental Society of Western Canada.

Science has at last made possible the preservation of the natural teeth, and now with due application of the knowledge won for us, we may keep intact those organs, until life's closing hours.

The baby's teeth when they first emerge from the coral gums, are like little pearls, white and glistening, clean and sound; but they will not long remain so if watchful care is not bestowed upon them. From the moment the first two teeth appear give them your personal and special care. Wash the little mouth carefully, and see that no particles of milk or other food remain lodged in the soft tissues of the lips and cheeks, under the tongue or around the little teeth, to sour and produce fermentation and disease.

Wrap a piece of soft linen around your finger and rub the teeth carefully and gently, remembering that when they first emerge from the gums they have but little root and are held in place only by the elastic tissues of the gums and the pressure of the tongue and lips; only as the roots grow longer are walls built around them to retain them firmly in place. And right here let me give a word of caution against allowing the foundation of the habit of "sucking the thumb" or fingers, no matter how much it may appear to help in "keeping baby quiet;" for there are at

least two ways in which the habit is injurious. The teeth as yet not being firmly held in place, the constant pressure is liable to push them into irregular positions, interfering with distinct speech as well as with good looks. Air is also swallowed in the fruitless sucking, and the stomach unduly distended, causing colics and other disturbances. When long persisted in, the strong effort of sucking may draw in the side teeth by the pressure of the muscles in the cheek, the front teeth be drawn forward, the roof of the mouth pushed up and the whole upper jaw deformed, causing irregularity of the permanent teeth if the habit is allowed to become fixed; even the nose is sometimes permanently disfigured by the hooking of a finger in it to hold the thumb in place during sleep.

As soon as the eight incisors are in place, procure a soft camel's hair baby toothbrush and begin that regular systematic care which alone will preserve them. Brush them from the gum toward the cutting edge; downward for the upper teeth and upward for the lower teeth, never brush them in the contrary direction, as that will inevitably crowd the gum back and expose the neck of the tooth which is not protected by enamel, and never brush them crossways, as it is of no benefit to the teeth, and will not remove the food from the interstices, but rather pack it in and injure the gum.

When the molars appear, brush them in the same way all round the crown, and on the grinding surface in all directions, to clean the sulci in the enamel, which are frequently incomplete in the centre, minute fissures often existing, which allow acids from decomposing food to penetrate to the dentine, and thus open the way for the microbes, which soon cause decay. Floss silk should be passed between the teeth, in order to remove every particle of food from round and between the teeth every time food is partaken of, and the mouth frequently rinsed with clear water. The necessity for cleaning the teeth thoroughly every time food is eaten affords another argument for regularity in eating, for children who are eating sometimes all day long, will never have clean teeth. Above all, the teeth should be most thoroughly cleansed the last thing at night, to remove all particles of food, which, if left in and around the teeth during the long, quiet hours of sleep, will surely decompose, and form those acids most destructive to tooth tissue. The teeth should also be brushed and the mouth washed as described the first thing in the morning to clean them of deposits from the fluids of the mouth, which accumulate during the quiet hours of sleep. This accumulation is less during the day, because of the motion of the lips, tongue and cheeks.

Children should be carefully trained to sleep with lips closed, and every indication of the stoppage of the nostrils from colds or incipient catarrh should be promptly remedied, for breathing through the open mouth is, as said before, very injurious to the teeth, rendering them liable to rapid and early decay from the varying temperature of the air thus circulating around them, and the rapid evaporation of the saliva. The same care and treatment that will preserve the baby's teeth will also preserve the teeth of all ages, but mothers must care for their babies' teeth themselves, and only very cautiously and gradually entrust this important duty to the child, and then only under your own eye for a long time till you are sure it will be regularly, thoroughly, and systematically attended to. The teeth of a child being more, immature and of softer structure than those of an adult, require closer watchfulness, while the more thoroughly they are cared for in early life, the less liable are they to decay in later years.

We will now consider why it is a matter of the greatest importance that the baby's teeth—which are eventually to be replaced by larger, stronger, better teeth—should be preserved in all their integrity till, having done their duty, Nature removes them, one by one, as their successors are ready to come forward. This is accomplished by a most beautiful process—one of the most beautiful and wonderful in the human economy, namely, the absorption of the roots. The crowns then detach themselves from the gums and fall from the mouth, having fulfilled their mission without ever having caused a moment's pain or suffering to the child when the teeth are of good material and have received proper care.

When the baby teeth loosen and fall out, in Nature's own time, they have no roots; but when they are extracted prematurely the roots are long and firmly attached. The first permanent molars have roots even larger and more divergent than in the other permanent teeth. These are too often mistaken by mothers for temporary teeth and allowed to decay so far as to demand extraction. The tooth being frail from decay, offers no firm hold for the instruments of the dentist, and, as it is usually supposed that anybody can pull a baby tooth, the young, tender jaw-bone itself is often injured in these attempts at premature extraction by an unskilled hand; or, the crown being broken off, the roots are left in the jaw to decay, causing much suffering from abscess, and will, if not removed, prevent the second permanent molars from coming forward to fill the space, which they will do if the roots are removed before the molars make their appearance. If the first permanent molars have unfortunately been allowed to decay so far as to be beyond filling, they should be extracted, but

only after consultation with a competent dentist. If the temporary teeth are allowed to decay, the pulp will die, when usually the roots will not be absorbed, but remaining in the jaw will form an obstacle in the path of the permanent tooth, which is thus forced out of its natural position causing irregularities and deformity. This is one reason, then, why the baby teeth should not be allowed to decay, necessitating premature extraction.

Another reason, because the loss to the child of the organs of mastication is a very serious one. The stomach being overtaxed by unmasticated, indigestible food, the general health must suffer. Assimilation being imperfect, nutrition is impaired, and the growth and development of all the organs checked. If decay is allowed to go on until the pulp of the tooth dies, suppuration will take place, and an abscess being formed, the growing germs of the permanent teeth are liable to be injured (or the growth of the roots entirely checked, if they are well advanced toward eruption) by the inflammation of the surrounding tissues. The teeth being held in their upright position partly by the lateral pressure exerted one against another, the bony walls of the socket of the last tooth having disappeared, the pressure from the remaining teeth on those adjoining the vacant place, meeting with no opposition, gradually crowd them over into this space, which is sometimes thus entirely obliterated. When this occurs in several distinct places in the mouth, the consequent loss of space cannot fail to be disastrous to the regularity of the permanent teeth.

If more teeth are removed from one side than from the other, which is very apt to be the case, the unresisted strain of the powerful muscles on that side of the face will draw even the lips and nose to one side, producing distortion of the face and marring its beauty forever.

Great care should be exercised by the dentist with his small patients so as not to cause them to dread the operation. With some children it is better to do little or no work until you have thoroughly won their confidence, and even then sittings should not exceed half an hour. Better to have several short sittings than one or two long ones, and the result will be more permanent. Have the parents bring the children regularly every few months, and then when the teeth have been properly filled instruct the children or parents how to look after them.

Dr. Homer Judd sums up the reasons why the baby teeth should be taken care of as follows:

First.—Because they are needed for daily use.

Second.—Because it will prevent a great amount of pain and sickness.

Third.—Because by these means the nutritive process will be

carried on better; and as a consequence the health, growth, and development in children would be better than if the teeth were permanently lost, and better development of all parts will be thus attained.

Fourth.—Because the proper care and retention of the deciduous teeth will exert a salutary influence on the permanent set.

THE UNDESIRABLE SIDE OF SOME OF THE PREPARATIONS USED IN DENTISTRY.

BY DR. G. F. BUSH, WINNIPEG.

Read before the Dental Society of Western Canada.

It was with no small amount of misgiving that I undertook to write a paper on the above subject, for there are few preparations used in modern dentistry which have not each and every one called forth a considerable amount of discussion on either side in the journals and otherwise. I shall endeavor in this short article to point out the undesirable side of a few of the preparations most commonly used, and also try to suggest means by which these unwished-for features may be modified or avoided.

ARSENIC.

The minimum poisonous dose of arsenic is usually considered to be about one grain. The medicinal dose in the *British Pharmacopeia* is from 1-60th to 1-15th of a grain, and as 1-40th to 1-60th of a grain is sufficient to devitalize the pulp in a tooth, it is safe to presume that the dentist will run no risk of having fatal results from an application for this purpose.

But few of us have been in practice very long without having it brought home to us how truly disastrous is the effect of this drug when carelessly or improperly applied. These careless applications have always, of course, been made by "the other fellow" and the sufferers have wisely come to us for relief. In order to avoid these ill effects as much as possible, I think it is desirable to almost invariably cover an arsenical application with amalgam. I do not wish to be understood as advocating an amalgam filling, which would, of course, give great pain on account of the pressure required. The arsenical preparation may be placed on a small piece of cotton (or the nerve devitalizing fibre prepared by the S. S. W. Company may be used) and placed in exactly the proper position. A small portion of extremely soft

amalgam is then smeared over the cotton, and then cotton steeped in Sandarac Varnish, or any other preparation put in to fill up the cavity and to keep the application securely in place.

This kind of application is easily removed, and insures absolute safety against leakage of all kinds. Should the cavity slope down below the gum to any great extent at the cervical margin a little soft amalgam may be placed in that part before applying the arsenic.

Should the cavity be of a saucer-shaped variety on the labial or lingual aspect, the cavity may be entirely filled with the soft amalgam and a piece of waxed floss silk wrapped around the tooth two or three times and tied. The silk will imbed itself slightly in the amalgam and it will thus be kept from moving.

PEROXIDE OF HYDROGEN.

Care, of course, should be taken not to force any agent of this kind through the apical foramen into a blind abscess, as there is every chance of a valvular closure of the foramen, and most painful, and even alarming, results may follow. The principal trouble with hydrogen peroxide and the like preparations is that very quality which makes it so valuable to the dental practitioner, viz., the facility with which it yields its excess of oxygen. In order to prevent the gradual loss of this all-potent element, the bottle in which it is kept should be inverted in a vessel of water. A little may be taken out every day or so and placed in a small stoppered vial ready for immediate use. It will in this way be like the advertised qualities of a certain beverage manufactured in this country, true to the last drop. The shallow form of pickle jar is one of the most convenient forms of vessel for this purpose. The mouth of the jar will catch the bottle at the swell of the neck, and it will then stand on the shelf as safely as if standing on its own bottom. For those who are some distance from their base of supplies, and who have any reason to doubt the strength of their peroxide, it may be tested in a simple manner by dropping a crystal of permanganate of potash into the doubtful fluid, and they will be able to judge by the violence or otherwise of the reaction as to whether the solution is nearly up to the standard.

CHLORO PERCHA.

On account of the tendency of this preparation to shrink, and the difficulty of keeping it exactly in the state of fluidity required, I am of opinion that it should be supplanted by a mixture of gutta percha and eucalyptal. The solution is easily made and by the assistance of a little heat is always ready for use. It is a splendid lubricant and antiseptic.

OIL OF CASSIA.

While being a splendid antiseptic, and possessing remarkable penetrating properties, its use as a root canal dressing in any of the anterior teeth is contraindicated, as it will almost invariably give them a very objectionable tint. If an antiseptic dressing is required in these teeth, it should consist of some essential oil or other preparation which has not a tendency to darken with age.

COCAINE.

It is with fear and trembling that I venture to make any observations regarding this important and much-abused drug. I shall confine what I have to say to hypodermic use for the purpose of lessening the pain in the removal of teeth. By reason of the difficulty, or almost impossibility, of limiting the circulation to the area to be anesthetized, the systemic effects of any preparation hypodermically administered become rapidly apparent, and I think it is ill-advised to combine with the solution of cocaine any drug whose systemic effect is supposed to counteract that of the cocaine, for it is well known that there are many persons who seem to have an idiosyncrasy to some one drug, and again there are others upon whom a drug seems to have a total reverse effect to the therapeutic property generally ascribed to it. Should any unusual symptoms appear after the use of a simple solution, the practitioner has a good idea how to treat the patient, whereas if he were using a combined solution he might be sorely puzzled as to the best method of procedure. After the injection of cocaine if there are any signs of physical distress, it would as a general rule be wise to operate immediately, as by this means the fear of the pending operation is removed, and the patient is less inclined to give up. And while I am on this subject, I cannot refrain from making a few remarks regarding hypodermic injections of any kind for extraction. Taking it for granted that the needle, syringe, and fluid are all thoroughly aseptic, it is to be remembered that a tooth or root which it is necessary to remove usually has or has had an alveolar abscess, that there is probably an oozing of pus around the gingival margin, often not very easily noticed, that the fingers of the operator come in contact with these parts, and that should he happen to touch the needle near its point he is conveying into the system a most virulent poison. Granted the needle has been inserted without any septic contact, there may be a sac to which the fluid may find access by an easy channel, and by inflating the sac discharge the pus into the system. I may seem to be coloring all this a very sombre hue; but you will remember that it is the undesirable side which I am taking up.

And there is another point, one which does not seem to have received much consideration, and that is the fact that as a general rule where the oral cavity is in such a state as to require the removal of one or more roots or teeth, the laws of cleanliness have not been very closely observed for some days at least, and there must be present in such a mouth, especially in the vicinity of the tooth to be extracted, a considerable number of ptomaines, some of which are likely to be poisonous, and it is difficult to follow the rule observed in other surgical operations, that of disinfecting the part which is to be punctured.

I find I have written more than I at first intended, and shall therefore not take up your valuable time any longer, but will submit these thoughts in all humility to your consideration. Bacon has said that there is no pleasure comparable to that of standing on the vantage ground of truth, and if this paper or the discussion it should call forth should help a brother practitioner towards that vantage ground in ever so slight a degree, I shall feel it an honor indeed to have been the means of so helping him.

INSTRUCTING OUR PATIENTS.

BY DR. W. D. COWAN, REGINA.

Read before the Dental Society of Western Canada.

To win the confidence of the public is absolutely essential to the success of every dentist. To retain that confidence is just as essential.

Many a dentist has lost the confidence of a number of his patients merely because of the fact that he has not given proper instruction, and at the proper time, to these patients in regard to work that he has done for them. The giving of advice to a patient is really an art. It is a part of our professional duties to which I believe, in our own interests, as well as those of our patients, sufficient attention is not given.

We are altogether too apt to assume that the general public understand the nature of the work we do for them. We sometimes feel amused at the ignorance of dentistry displayed by the questions of our patients. We seem to forget that what is simplicity to us—giving a lifetime to the study of dentistry—is an absolutely unknown region to those who come to us for services, and through this forgetfulness we send them away quite unenlightened upon the nature of the work done and its possibilities. They form their own conclusions as to the durability, etc., of what

we have done. These conclusions may be erroneous, but if what we have done does not conform to their conclusions, we have lost their confidence entirely. A couple of examples to illustrate: Take any of the "cement fillings." We all use them, and we all know that with few exceptions they are not as permanent a filling as we would like. Suppose we insert some of these, and send the patient away without explaining what is likely to be the condition of these teeth one year hence. What happens? That patient expects these fillings to remain in their first condition permanently. Instead of that, within a few months, in some cases, the fillings will have become coated and discoloured, in almost all cases they have worn away sufficiently to leave a sharp edge. She comes back and complains that the filling is out. You examine, and know that it is doing its duty, and you feel satisfied that it is all right and that nobody could have done any better. Tell her this and she may acquiesce, but she doesn't believe you. In many cases her firm impression is that you have done scamp work and are trying to wriggle out of doing it over again, as she has fully determined you should do. You have lost her confidence, and even if you should succeed in making her believe you are right, she has already spent several months telling her neighbors that the fillings you inserted had all come out. Now, had it been explained to this same patient at the very beginning that these sharp edges, etc., were likely to happen, and that the nature of this filling required close watching, she would have come back not denouncing, but with full confidence that you understood your work and were acting honestly with her. In cases of this kind explanations have to be made sooner or later, and the time at which it is done is, to my mind, the all-important part of it. We cannot afford to delay until that condition of tooth and of patient's mind has been produced, when an honest explanation is going to take on the coloring of a plausible excuse gotten up for the purpose of escaping the re-doing of our work.

Let us take the case of a "temporary plate." Just send our patient away with one of these without telling her very fully—yes, in a very impressive way—what the condition is likely to be, in, say, four months, and about that time she will be back to you complaining that the plate is loose, and accompanying her complaint with the request that we tighten it—at our expense, of course. To turn in and explain matters now is in a great majority of cases going to result in a certain amount of distrust, and in a still greater proportion, of dissatisfaction. Whereas, had the whole thing been done at the very beginning ten chances to one we would not have been bothered at all, but if so there is already a mind to deal with which is prepared to receive and understand

the truth, and during all this time that patient will not be talking to neighbors about the loose plate we made for her, which is something all dentists must guard themselves against.

We all know that there are lots of dentists doing first-class work who, for some reason, are unable to hold their own alongside of men inferior as workmen. The reason is that they lack that business tact which wins and retains the confidence of their patients. Tact in the handling of our patients is a valuable asset in my estimation, did we but study the art of instructing our patients in regard to the work we have done for them, and apply it in a tactful way, we would save ourselves a lot of annoyance and increase the faith which the public has in dentistry as a science.

So much for this side of the question which looks to our own protection and advantage. Just a word in regard to the instructions which should be given our patients, and the public generally, with the object of preserving to them the organs of mastication. To my mind this side of the question resolves itself into two points which alone it is necessary to force upon public attention. Dental hygiene covers one of these; the imperative necessity of properly cleaning the teeth. The other is the all-important question of getting the teeth filled immediately they have started to decay. If the dentists would lay aside their dental vocabulary when talking with patients, quit talking about things that must be imperfectly understood, and for a time centre their whole attention upon educating the people up to properly cleaning their teeth and getting them filled just as soon as possible after decay has started, I am confident we would soon hear less of the terrors of dentistry and of the failures of fillings.

ADAPTATION OF ARTIFICIAL DENTURES.

BY DR. C. P. BANNING, WINNIPEG.

Read before the Dental Society of Western Canada.

In considering this subject, the question naturally arises, What are the reasons that make it necessary to resort to any changes in the impression or model in making a plate? If we find out the defects we will be able to look for intelligent remedies.

We often have patients come to us complaining about their plates. They say that the plate fits well, but as soon as they begin to chew that it falls down. Leaving out of consideration

the question of articulation, which does not enter or belong to this subject, we find that upon pressure being brought to bear upon the molars on each side the plate rocks or tips, the air escaping at the sides in little bubbles; clearly there is not good adaptation.

If we examine the mouth for the trouble, we will find that a long bony ridge extends along the middle line. This marks the union of the palatal processes of the superior maxillary bones. On each side of this ridge there is a soft, yielding area. Now, when a plate has been worn for a while, the pressure causes it to become imbedded to a certain extent in the soft tissues, until it strikes against this hard ridge. Not being able to go any further in the middle of the mouth on account of this ridge, and the soft tissues still yielding under pressure, the plate must tip. Obviously to get rid of this tipping, we must do away with the contact with the central ridge. A good way to do this is to trim the impression to the desired extent, along the whole length of the ridge. Some use the suction chamber for this purpose, as well as to hold the plate in place. But it will be readily seen that the former object will not be accomplished, since the whole ridge will not be included. With regard to the latter idea a word or two would not be amiss, although strictly speaking it is not included in this discussion.

The use of suction chambers was prompted by the erroneous idea that a plate would be permanently held in place by the vacuum thus formed, and that it is atmospheric pressure that is the agent that does the work. Of the former idea there can be no reasonable doubt. A suction chamber will in a short time cease to be such, since the soft tissues will completely fill it up, making it like the rest of the plate, subject to the law of adhesion only. With regard to atmospheric pressure we say, roughly speaking, that there is a pressure of fifteen pounds per square inch. Now, in an average plate, there will be say eight square inches of surface exposed to the air. That would make a total pressure of 120 pounds to hold the plate in place. We all know that most plates can be displaced with a few pounds pressure, so the theory must be wrong if the above calculation is right. What, then, serves to hold the plate in place? We are all familiar with the force necessary to pull apart two wet pieces of glass. Well, here is our clue. There is a law in physics that two perfectly-fitting surfaces separated by a fluid will require a force of about two pounds per square inch to separate them, leaving out of consideration atmospheric pressure. This force is known as *adhesion* and is the agent that holds our plates in place. To obtain perfect adhesion we must get perfect adaptation, and to secure this in the fitting of

plates we must make allowance for the difference in softness of the tissues in the various parts of the mouth.

Reference has already been made to the soft yielding zones on each side of the hard ridge. There is more give to these areas, than any others with which we have to deal. Consequently it is good practice to make the plate bear harder on these places. This is best secured by scraping the model to the desired extent, which of course varies with different mouths. The model should also be scraped along the plate line wherever the tissues will permit. The plate should be extended over the cuspid eminences as far as possible—further than most people imagine. At this point, as well as around and between the tuberosities, the model can be scraped to a considerable extent. In the region of the bicuspids and the bony ridge posteriorly are the tender places where caution is required.

TWO INTERESTING CASES.

BY G. LENOX CURTIS, NEW YORK.

Two cases that came under my observation recently presented some peculiar features that may be interesting and instructive to some of the readers of your journal. In one of these a dentist, in treating an alveolar abscess of a lower first molar, had injected some hydrogen dioxide through the apical foramen into the sac of the abscess. As there was no outlet from the sac, except through the small orifice of the pulp canal, the pressure caused by the gas generated by the hydrogen produced the most excruciating pain. This sensation of great pain moderated somewhat after a few seconds, but continued to be a source of great discomfort for several days. Another result of the injection was, that the half of the chin on the side where the tooth was located became numb, and was in this condition when the case came to me for treatment, which was two weeks after the injection of the hydrogen. Upon examination, I found there was considerable area of necrosed bone around the affected tooth. The tooth and dead bone extending to the inferior dental canal were removed. When this was done the numbness abated, and in two weeks after the operation it has entirely disappeared. The conclusion arrived at by the consideration of this case is: That anything that will produce gas should not be injected into a cavity of this kind, unless there is an opening from it large enough to insure the free escape of the gas generated.

The other case was one where a dentist undertook to treat

a diseased antrum. He attempted to inject hydrogen dioxide into that cavity, but failed to introduce the point of the syringe into the orifice that opened into it, instead thrusting the point into the cellular tissue surrounding the base of the second molar, and as a consequence the hydrogen was discharged into that structure. This immediately produced severe, torturing pain in the temporal region, the whole of that side of the face swelled enormously—the cheek became indurated, and the entire side of the face and tongue were paralyzed. The treatment applied by the dentist did not produce favorable results, and this condition continued with trifling abatement for three months, when the case came into my hands. Upon examination it was found that a large portion of the external plate of the antrum was in a necrosed condition. When this was removed, the paralysis disappeared, the case yielded kindly to treatment, and the parts were soon restored to a condition of perfect health.

Proceedings of Dental Societies

THE DENTAL SOCIETY OF WESTERN CANADA.

Officers and Committees of the Dental Society of Western Canada for 1901:

President—Dr. S. W. McInnis, M.P.P., Brandon, Man.

Vice-President—Dr. N. Schnarr, Rat Portage, Ont.; Dr. W. T. Cowan, Regina, N.W.T.; Dr. G. J. Clint, Winnipeg, Man.

Secretary-Treasurer—Dr. Geo. C. Mathison, Winnipeg.

Membership and Ethics Committee—Dr. J. E. Ross, Chairman, Winnipeg; Dr. A. P. McInnis, Brandon; Dr. C. P. Banning, Winnipeg.

Programme and Dinner Committee—Dr. G. F. Bush, Winnipeg, Chairman; Dr. B. J. Curry, Winnipeg; Dr. C. H. Walsh, Winnipeg.

This Committee was appointed at last annual meeting to bring in report.

Winnipeg, July 29th, 1901.

Your Committee on Nationalization of Standard beg to report as follows:

That representatives of each of the Boards or Councils of the several Provinces and Territories, together with Newfoundland, have been communicated with, forwarding them copies of the paper furnished by Dr. McInnis at the last meeting of this Society, together with copies of a resolution passed at a meeting of

the directors of the Royal College of Dental Surgeons of Ontario, held October 17th, 1900, which read as follows:

"That this Board approve of the formation of a Dominion Dental Council, organized by approval of the legal representatives of the profession in the several Provinces, whose duty it would be to conduct a dental examination on a standard as high or higher than that of any of the Provinces, and whose certificate would admit to practise in any of the Provinces of the Dominion, such council and examination not to interfere in any way with the local provisions for qualification for registration in any of the Provinces. The Board further expresses the opinion that, on account of the expense involved, the proposed Council should not consist of more than one representative from each Province, and possibly one from each school. That the President and Secretary be a Committee of Consultation if occasion arises."

And that replies, in the majority of cases, have been received favoring the movement, although as yet (Ontario exempted) no official report has been received of action being taken by any of the said Boards of Councils.

Your Committee suggests that a further committee be appointed to endeavor to procure a National Convention, with representatives from all the Provinces and Territories, and to represent this Society at that Convention.

And your Committee further suggests that such resolutions be adopted at this meeting that will express the opinion of this Society upon the Nationalization of Standard in Dentistry.—Carried.

G. F. BUSH, Secretary.

Moved by S. W. McInnis, seconded by G. F. Bush:

Whereas, the existence of inter-provincial barriers, while working inconvenience to the profession tends to diversify the standards in the profession, and *whereas*, in the opinion of this meeting, the establishment of a national standard in the profession will tend to

1. The elevation of the standard in our profession.
2. Ease of inter-provincial registration.
3. The establishment of dentistry as a learned profession in the eyes of the public as well as the profession.
4. The early acknowledgment of the Canadian standard in Great Britain and other parts of the Empire.

Be it resolved, that early steps should be taken to secure a national convention, with representatives from each Province and Territory, in order that some plan may be adopted whereby the nationalization of proper standards may be accomplished. And be it further resolved, that a copy of this resolution be forwarded to the DOMINION DENTAL JOURNAL for publication.—Carried.

Moved by Dr. Bush, seconded by Dr. Cowan:

Whereas, it has been amply proved by experiences obtained from the late South African campaign that great suffering has resulted to our soldiers from inadequate dental attention; therefore this Society heartily endorses the sentiments expressed in the circular issued by the Eastern Ontario Dental Society *re* the desirability of appointing dental surgeons to the Canadian Militia, and that a copy of this be sent to the Minister of Militia.—Carried.

Moved by Dr. G. P. Bush, seconded by Dr. R. R. Dalgleish:

That this Society wishes to express its sincere sympathy with the bereaved relatives of the late Dr. W. George Beers, of Montreal, and the members of this Society desire to express their sense of personal loss in the demise of one who labored so long and earnestly for the benefit of his profession.—Carried.

INSTITUTE OF DENTAL PEDAGOGICS.

The next meeting of the Institute of Dental Pedagogics will be held in Pittsburg, December 31st, 1901, and January 1st and 2nd, 1902. The following educators have been selected to supply the programme.

1. How to Conduct the Operating Clinic, by G. V. Block. Discussion by Whitsler, Grant, Guilford.

2. Four ten-minute papers on the Executive Work of the Faculty, by E. C. Kirk, John I. Hart, J. D. Paterson, and G. E. Hunt.

3. How to Teach Dental Metallurgy, by Hodgins. Discussion by I. J. Beal and Essig.

4. Five ten-minute papers on Class Methods of Teaching, by N. S. Hoff, L. S. Tenney, S. W. Foster, and Nones.

5. Methods of Teaching Bacteriology, by W. R. Blue. Discussion by L. B. Bethel, Geo. Cook, and W. E. Walker.

OFFICERS OF THE NATIONAL DENTAL ASSOCIATION.

President—T. A. Libbie, Pittsburg.

Vice-Pres. (East)—S. H. Guilford, Philadelphia.

Vice-Pres. (South)—L. G. Noel, Nashville.

Vice-Pres. (West)—W. P. Dickenson, Minneapolis.

Corresponding Secretary—Miss Josephine Pfefer, Chicago.

Recording Secretary—A. H. Peck, Chicago.

Treasurer—H. W. Morgan, Nashville.

Executive Council—H. J. Burkhart, Holly B. Smith, C. C. Chittenden, N. W. Findlay.

Executive Committee—C. S. Butler, G. V. I. Brown, W. N. Cogan.

OFFICERS OF THE NATIONAL ASSOCIATION OF DENTAL FACULTIES.

President—Wilber Litch, Philadelphia.

Vice-President—G. V. I. Brown, Milwaukee.

Secretary—W. H. Kenerley, St. Louis.

Treasurer—H. W. Morgan, Nashville.

Executive Committee—H. B. Tileston, Louisville; S. W. Foster, Atlanta; J. I. Hart, New York; J. B. Willmott, Toronto; D. J. McMillan, Kansas City.

Ad Interim Committee—J. P. Gray, Nashville; W. T. McLean, Cincinnati; A. H. Peck, Chicago.

Law Committee—Weisse, New York; Montell, Baltimore; Morgan, Nashville.

Selections

AN ORDINANCE RESPECTING DENTISTRY IN THE YUKON.

The commissioner, by and with the advice and consent of the Council of the Yukon Territory, enacts as follows:

1. This ordinance may be cited as "The Dentistry Ordinance."
2. The territorial secretary shall cause to be prepared a register for the Yukon territory.

3. He shall forthwith cause to be entered in such register, with the date of entry, the name of every person who at the time of the passing of this ordinance is and has been for twelve months next preceding such time actively engaged in the Yukon territory in the practice of the profession of dentistry or dental surgery and who verifies such act by statutory affirmation. And shall from time to time upon application and production of satisfactory evidence enter in such register with the date of entry the name of every person who possesses a diploma of graduation in dental surgery in any dental college in Canada or from any university in Canada having a special dental department or from Britain or any of her dependencies.

Every person who has served two years as an apprentice to the dental profession within the Yukon territory having at the time of the commencement of such apprenticeship, and during such two years the qualifications contained in any one of the pre-

ceding sub-sections of this section of whose name was at such time and during such two years entered in such register under this ordinance, if such person has passed such examination as is prescribed by the commissioner of the Yukon Territory, and obtains from such practitioner to whom he was apprenticed a certificate of satisfactory and good moral character.

4. The territorial secretary shall not enter in such register any person until such person has paid to the comptroller of the Yukon Territory a fee of \$50, if he is entitled to be so entered under any other subsection of said section.

5. From and after the first day of December, A.D. 1901, no person shall practise the profession of dentistry or dental surgery within the Yukon Territory unless his name has been entered in such register under the provisions of this ordinance.

6. The commissioner may from time to time appoint one or more examiners in dentistry or dental surgery within the Yukon Territory unless his name has been entered in such register under the provisions of this ordinance.

7. The commissioner may from time to time appoint one or more examiners in dentistry or dental surgery, and may obtain from them a report of the subjects suitable and proper for the examination of candidates under this ordinance, and may upon such advice as he deems proper fix and publish the list of such subjects.

8. The list of subjects, the papers prepared for such examination, and the answers of candidates or any of them may be submitted by the commissioner to any authority he seems fit, to determine the fair and proper character of such list and papers and the characters of such answers.

9. The territorial secretary shall, upon request, issue to any person whose name is entered in such register a certificate of such entry and of the date thereof, and such certificates shall be sufficient evidence of the facts so certified.

10. Every person who proposes to become entitled to be entered on the register by reason of service of apprenticeship in the Yukon Territory to be performed after the passage of this ordinance shall give notice to the territorial secretary of the fact and file with such secretary a verified copy of his articles of apprenticeship.

11. The secretary shall keep a record of such notices and copies and shall enter no such person in the dental register unless two years have passed since the receipt by the secretary of such notice and copy.

12. Every person whose name is entered in the dental register shall, before the first day of August in each year, produce to him

such receipt, signed by the comptroller, showing payment of said fee. The name of such person may be re-entered upon payment of a fee of \$25 to the comptroller, and production to the secretary of proof of such payment.

14. Subject to the exceptions hereinafter made, no person shall practise dentistry or dental surgery, in any of its several branches, in the Yukon Territory, unless his name is entered in the dental register.

15. Every practitioner who has, after due enquiry, been adjudged by a board appointed by the commissioner to have been guilty of infamous conduct in any professional respect, or been convicted of any crime punishable by imprisonment in the penitentiary, shall forfeit the right to have his name entered in the register, and his name, if entered, shall be erased from the register and his name shall be published in the Yukon Official Gazette as having been so erased.

17. The secretary shall, on or before the tenth day of August in each year, publish in the Gazette aforesaid a list of the persons whose names are entered in the dental register, and who are entitled to practise dentistry and dental surgery.

18. No person shall be entitled to recover any charge in any court of justice for any professional advice or attendance or for the performance of any operation appertaining to the practice of dentistry or dental surgery or for any surgical or dental appliances which he has supplied, unless his name is registered under this ordinance, but this section shall not apply to duly qualified medical practitioners or to duly qualified druggists or chemists in the course of their practice or business.

19. Every person whose name is not registered under the provisions of this ordinance, who practises dentistry or dental surgery for hire, gain or hope of reward, or wilfully or falsely pretends to be a practitioner of dentistry or dental surgery, or takes or uses any name, title, addition or description implying or calculated to lead people to infer that his name is registered under this ordinance, or professes by public advertisement, card, circular, sign or otherwise to practise dentistry or dental surgery or to give advice therein or in any wise to lead people to infer that he is qualified to practise dentistry or dental surgery in the Yukon Territory, shall be liable to a penalty of fifty dollars, and every day on which such offence occurs shall be deemed a separate offence.

20. Every person who wilfully procures or attempts to procure his name to be registered under this ordinance by making or producing or causing to be made or produced any false or fraudulent representation or declaration either verbally or in writ-

ing, and every person knowingly aiding and assisting him therein, shall be liable to a penalty of five hundred dollars.

21. Every penalty under this ordinance shall be recoverable with costs, and may be used for and recovered in the same manner as a private debt by the territorial secretary or by any dental practitioner whose name is registered under this ordinance in the territorial court, and being recovered shall belong to the fund of the Yukon Territory.

22. Upon the trial of any action under the provisions of this ordinance the burden of proof as to the right of the defendant to practise dentistry or dental surgery in the Yukon territory shall be upon the defendant.

24. Nothing in this ordinance shall prevent any person from giving necessary aid to anyone in urgent need of it; provided that such aid is not given for hire or gain, nor giving of such aid made a business or way of gaining a livelihood.

Amendment to Section 3.

Amend sub-section (b) of section 3, by adding: "or from any dental college or university having department in any foreign country if the commissioner deems a diploma of graduation from such last-mentioned college or university a sufficient proof of qualification to practise dentistry or dental surgery."

The dental ordinance as passed provides for registration of all dentists now here by December 1st, and for registration of those who may come also for examinations. It provides further that graduates of foreign dental colleges who may apply be admitted to practise on approval of certificates by the commissioner. Mr. Ross said this last provision is made because most Canadian dentists are educated in their profession in American colleges—*Dawson City Daily News*.

EVOLUTION.

It is wonderful to me that our modern scientists have never noted the evidence of the Scriptures upon this subject of evolution. As to the origin of the monkey, there is a great deal of Scripture on that.

Do you remember in one of the chapters of Genesis it is said that the sons of God fell in love with the daughters of the children of men and took unto them wives. To those of you who will look underneath the veil, you may see the origin of the monkey. Never has humanity been without its instructors. From the higher realms they have come down to earth, according to that law of sacrifice, to enter into these lower elements, and in process

of time ascending again unto gods, and so help on the evolutionary process of those that have not yet evolved up through the vegetable, animal, and human kingdoms.

It is man's business, to my thinking, to become a god, and just in proportion as we increase our knowledge, just in proportion as we become a jack of all trades, are we making progress. A man who has shot out a tentacle in one direction, so that his arm will reach around the corner of a house, is a very useless animal except for amusing the public. He is like the occupant of a tent in the desert, where beasts are howling and tempests raging, who builds a wall around his tent on one side, but leaves the other three sides exposed. That is what the genius has done. He builds but on one side. I believe that a man should progress evenly, physically, mentally, and morally. I do not believe there is any department of his nature that should be left unregarded. Just in proportion as he gives equal attention to all, just in that proportion will he make advance in all, and not to the detriment of one. If he gives special attention to the one, he must do it at the expense of the other.

What I have had to say has been very disconnected, but I am unable to do any better. It tends to show one thing, that is the perfectability, not alone of man—not alone his evolution, but the evolution of everything. The evolution of the universe. There is no one thing which can be left out.

In conclusion, let me quote from a recent writer on this subject. I would like to ask what explanation it is possible for science to offer for the inequalities and injustices of life? What explanation has religion for the inequalities and injustices? Absolutely none. The gospel of the scientist is the survival of the fittest. Religious dogmatists declare it is the will of God; "Ye are born in sin," and in the same breath declare God to be of infinite love and tenderness. If the first is true, the second cannot be, and the question remains unanswered. But God and Nature answer this question in every seed that is cast into the ground and comes to fruit and flower. It is answered every time that we fall asleep at night and awake again to resume our daily duties. The answer is, that we reap what we sow. Having sown the seed of action, we return to reap the harvest of results—not in some distant planet, but here, where we have sown the seed and must bear the harvest it produces. I think Solomon said: "That which hath been is now, and that which is to be hath already been, and there is nothing new under the sun." Mountains disintegrated by the elements are swept into the plain to become the soil from which plants build their structures. In the lily and the rose will you find the hard rock of the distant mountain peak. They

fade and fall, and years become centuries, centuries become millenniums, until at last the soil submerged again becomes the mountain top. The snake, which is a vertebra incased in muscle and skin, appears upon the scene; feet evolve, and the lizard follows the snake; the tail of the lizard disappears, and four-footed beasts abound. The creature, ready to stand erect, receives the manasic spark and becomes a man. Born an infant, he passes through youth, manhood and old age to second childhood, rehearsing in his pre-natal condition all the stages that have marked his evolution; he blossoms forth in the springtime of a new life, carrying in his inmost self the seeds of character that he, and he alone, has sown and harvested. The old has become the new, and the new is but a variation of the old. Evolution, then, is but a wheel within a wheel, from a high grade to a low, until we come at last to find that the two extremes touch, and our journey's end is but our starting-point.—Dr. C. L. Hungerford, in *Western Dental Journal*.

ABUSES IN DENTISTRY.

BY DR. J. P. ROOT, KANSAS CITY, KANSAS.

"We have done those things we ought not to have done, and left undone those things we ought to have done, and yet there is hope for us."

The Prayer Book says there is no hope for us, and makes the assertion in the singular. I have transposed a little and changed to the plural, for it is my desire that the rest of you should have the anticipation and expectation of your sins being forgiven.

In choosing as my subject "The Abuses in Dentistry," it was done so that my remarks could be addressed to you without touching my own person.

There is not a profession where the incentive to be honest and painstaking is more apparent than in dentistry, yet abuses take place daily, and probably will continue to, until Gabriel blows for eternal farewell to this sphere. What happens after that is of little import to most of us, as, with the exception of the old war-horses who conceived and gave birth to this association, very few of us will be here.

It is my desire to cite to you a few of the abuses practised daily by many of us, but of course mostly by the other fellow.

The greatest and most common abuse extant to-day applies to crown and bridge-work. I will venture the assertion that not one in ten of the crowns put on are perfect, and that the other nine are decidedly imperfect, and the aggravating, unredeeming fea-

ture is that there is no excuse for such a large percentage, as many of these failures emanate from the hands of able men, and are done solely from laziness or some kindred disease.

To me the greatest sloven is he who crowns live teeth. There is only one time when it is permissible or excusable to crown without the destruction of the pulp. That is in old age, when there is a receded pulp, and the tooth consequently is not sensitive, or liable to death from other causes.

This treatment will be disputed by some very able men, and by more disabled ones, as I have had the misfortune to be compelled to remove crowns from what were live teeth when crowned, and which were put on by some of these same able men. I am convinced they are wrong. Take the posterior teeth, as they are the ones shell crowns are used on, for it is natural to remove pulp from anterior teeth to provide room for a post. I am not talking to an audience who would use gold crowns on incisors or cuspids. Most of you look honest, but any one who makes a practice of putting on gold incisors lacks some of the essentials of honesty. There are two exceptions to this rule—one is where the patient is an elderly person and the incisors are badly worn and it is not advisable to raise the bite. In such a case you are justified in using gold. Another is where the strength of a gold crown is absolutely essential as a pier for a bridge. This is about the limit to which one can use them and retain his respectability.

The secret of a perfect crown is the perfect adaptation of the band, and to procure this necessity requires considerable time and disagreeable work in removing enamel, and, providing one can find a patient who will stand this severe punishment, death is very apt to follow, caused by irritation to the nearly exposed pulp.

Any banded crown on anterior teeth, even when perfectly adapted, is a poor substitute. The only perfect crown is one which lacks a band, but, unfortunately, we cannot always use one, especially in case of a small lateral incisor, where we cannot secure sufficient strength in the root for a retaining-post.

Let us now descend to common, every-day affairs, and abuse some of you for your abuse of the plebeian amalgam filling.

A frequent expression used to me when telling a patient to return next day and have an amalgam filling finished is, "Why, I never had to go back for such a purpose," and they seem to doubt your ability, as you cannot complete such a simple thing in one day; but on their return, and they see the difference, they appreciate the fact that in the past they have been wronged.

It is a serious neglect in attempting to complete an amalgam filling at one sitting, unless you follow the old-fashioned barbar-

ous method of keeping a patient in your chair for hours, thus, perhaps, giving a filling time to thoroughly set.

I believe more faulty fillings result from this careless way of practicing than from any other cause.

While on the subject of amalgam I will again make a statement which many of you have often disputed, and notwithstanding your disputes, you are wrong. That in approximal amalgam fillings it is impossible to make a perfect one without the use of the matrix, simply because you cannot have success without pressure, and you cannot have pressure without a matrix. Another simple thing neglected is in failing to use cement in a plastic state under all amalgam.

DISCUSSION.

Dr. Hungerford.—The critic is not a man that fails. He is a man that sees failures and tries to correct them. I think that what Dr. Root had to say about the trimming of those roots before the adjustment of crowns is perfectly just, and perfectly in accord with what Dr. Wasson says concerning the stump of the incisor receding so rapidly that a band one sixty-fourth of an inch in length would stand away from the root of the tooth. This is because there is great difficulty in trimming those roots. If you simply trim a little bit, of course, when your band is driven up, you will have it standing away from the root; but you have to devise an instrument and devote much time in order to trim those roots far enough up so that when your bands are driven on, they will not stand away.

Dr. Wasson speaks of the difficulty of filling these little tortuous canals in the anterior roots of the lower molars. I hope there is no gentleman here who ever attempts to fill a small, tortuous canal. I certainly never made an attempt to do so. I don't believe Dr. Patterson does, and I don't believe Dr. Root does. I do not believe that Dr. Wasson, if he would stop to think, would attempt to fill those small, tortuous canals as he finds them. If he would drill out those small canals until they were great, big, round, smooth canals, then he could put his filling down there. And I certainly take exception when he says the better class of dentists do not fill over 25 per cent. of those canals. I believe that 95 per cent. of them are filled within the limits of the profession in which I am thoroughly acquainted with the methods of operating. They fill those canals, and fill them to the end. Why should we take the chances of sleeping on a railroad track, hoping no train will come, when we can get off on the side of the track where no train can run over us? Why take the chances of putting those crowns on these pulps when a very large per cent.—75

at least, will die; when, by destroying the pulp, we will not have any failures at all. Dr. Wasson speaks strongly, and I speak strongly, for I have seen so many cases where trouble has resulted from the practice of crowning live teeth, and have seen very few cases where the pulps had been destroyed and failure had resulted, and these failures in the latter case were on account of haste, or unsuccessful manipulation, or because of the laziness of the operator, or the lack of proper tools, or the lack of the "know how" of cutting a path in order to clear those canals out to the end and fill them. The filling of a canal is the simplest matter in the world, but the cleaning out of these canals takes a long time. It takes a long time to tunnel through a mountain; but when you once tunnel it through a train goes through it very rapidly. You have got to devise instruments and ways and means to clear them out so that you can fill them. If you expect you can send some little prepared broach down in those canals and clear them out, you are mistaken. Very few of the variety of instruments go down in those canals at all, but you can cut them, and get them reamed out by the instruments made by our manufacturers, until they are large enough to take in any kind of root-filling you desire to place, gutta percha being preferable. The shrinkage of gutta percha is not the one-thousandth per cent. the cause of failures as much as the lack of space for the filling to reach. In the case of a canal that is filled one-half or two-thirds full, you might have a shrinkage of the gutta-percha. A canal stopped at the end, and water-tight, air-tight, and serum-tight, there will be no appreciable shrinkage of those solid gutta-percha points softened enough with chloroform to allow them to slip to the apical portion. If you should fill them with liquid gutta-percha, then there would be considerable shrinkage. Have your canals rounded out or made oval, so that when the gutta-percha point slips down there it is full, and there is no free chloroform to speak of. There will not be the one-hundredth of one per cent. of free chloroform. I would insist, if I had anything in the world to add that would impress you, that root canals must be cleared out and enlarged before you attempt to fill them; that before you attempt to crown teeth, you must so cone them to the lowest point that the harder you drive your band on the tighter it hugs them. Do not attempt to go just a little under the edge of the gum, but go well under the edge of the gum. I do not always succeed in getting these teeth properly coned. I do not always fill root canals, but I do fill such a large per cent. it will overbalance amazingly the results of those who do not attempt it. I am positive of that. I am positive also this matter of criticism I spoke of first goes in largely

very much like Dr. Root says. We listen to it here, and go home and forget all about it. I have heard men get up and speak at dental societies about trimming roots, and I have seen crowns put on by them shortly afterwards with great, bulging margins of enamel never trimmed at all. We listen to these things and go home and pay no attention to them, but resort to the same old methods. The ones we startle with at school, the ones we have been used to applying, and we are very little the better off for such criticisms, or from listening to papers. (Applause.)

Dr. Drum.—I want to say, as this seems to be the time for entering protests, I have one to enter also, and that is to the idea of riding a hobby here, whether a person be young or old in the profession. Now, there are cases where it is best to devitalize and there are cases where it is not best. There are some teeth that are nearly the same size at the gingival margin as they are at the biting edge. In cases of that kind, it is sometimes easy to get them in the right shape. I expect that I have done as much bridge-work as the ordinary country dentists, and I have had no trouble with pulps dying under a crown. I don't know of one. I certainly do not agree with Dr. Hungerford when he said 75 per cent. of them die. I have had no such experience as that, but where they have to be cut too much, I think it is best to devitalize.

As regards cement fillings, I have put cement under amalgam with good success where I have been very careful not to get it too close to the margin. I think we can put in cement, and almost entirely fill a tooth where the cavity is large, by making an undercut in the cement, letting the cement run pretty nearly to the edge of the cavity, so there is no chance of washing out.—*Western Dental Journal*.

A DENTIST was fined \$225 in Sidney, N. S. Wales, for trying to remove a plate from the mouth of a patient when she declined to pay for fastening one of the teeth to the plate. A leg, an arm, an eye, or tooth, is a part of the person after once being fastened to the body of the carrier.—*Dental Review*.

SARCASTIC.—“In gold filling always use a large foot-plugger to contour with, it pats the gold down so nicely; should you have the misfortune to see the corner tumble off during the operation, use the same plugger to repair the damage—with a sharp pointed one you might push a hole through your filling.”

Dominion Dental Journal

EDITOR:

A. E. WEBSTER, M.D., D.D.S., L.D.S. - - - - TORONTO, CAN.

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VOL. XIII.

TORONTO, SEPTEMBER, 1901.

No. 9.

ANOTHER DENTAL LEGISLATIVE OUTRAGE.

Another dental legislative outrage has been perpetrated upon a portion of the Canadian public. This time it is the Yukon which suffers, and the incident compels attention to the whole question of dental legislation and education throughout Canada. By the ordinance recently enacted by the Yukon Council, the Canadian graduate is placed at such a disadvantage that that country is practically closed to Canadians. True the law does not expressly discriminate against Canadians, but the effect of it will be that the Yukon will be filled with American dentists, to the exclusion of Canadian graduates.

In this law the political hand is uppermost. It controls everything. No standard of qualification is established. Whomsoever the politicians of the country choose to let in shall be permitted to practise. As an indication of how this power will be used, it is only necessary to quote the Yukon Commissioner, who at the time of the passing of the law said that they specially recognized foreign diplomas "because most Canadian dentists are educated in their profession in American colleges." The pre-determination therein shown is to favor the Americans. When

it is remembered, too, that under this same gentleman's administration in the North-West Territories, Canadians were so discriminated against that only five graduates of the Royal College are now practising therein, while some thirty American graduates are found in the same jurisdiction, it will be seen that the Yukon is, to all intents and purposes, closed to Canadians. The untruthfulness of the statement that "most Canadian dentists are educated in the States" displays an ignorance of dental conditions which will certainly result in the admission to the Yukon of all kinds of diplomas, bogus or otherwise. Certainly a man who would make such a statement has not the knowledge of the subject necessary to the administration of the law to secure the proper protection of the public.

This is the result of political control of our profession. Politics ought to have no place in the government of our profession further than to see that the law fully protects the public and permits of progress in dental science.

The fact that politicians are still exercising control in certain districts, and that even the governors of our country are so ignorant of Canadian dental educative institutions that they would make the statement which the Yukon commissioner did, proves that there is something radically wrong with the business management of these institutions. When further it is remembered that a large number of young men go to the States, and there study dentistry, they being absolutely ignorant of our own dental college and of the conditions necessary to practise in the greater portion of Canada, it will be seen how inadequate are the means taken by the directors of the Royal College to spread a knowledge in regard to that institution.

Now, we say unhesitatingly that the Royal College is one of the best dental schools in the world. Dentally it is quite satisfactory, but as a business institution—that is, looking after its own interests and the welfare of its graduates—it falls very far short of what it ought to be. In our opinion the directors owe it to the Royal College to take steps to bring the Canadian dental student to that College. More, they owe it to Canada as patriotic men to see that the Canadian youth is fully made aware of what he is doing when he goes outside of Canada to study dentistry. Ninety per cent. of those who go to the States to study are absolutely ignorant of the fact that when they graduate there they have practically exiled themselves from Canada; or if they do find a resting place in the Yukon or Territories they must practise there with limited possibilities and have as competitors all kinds of bogus graduates—yes, even to men who have been plucked and expelled from college, and are there registered by special legislative enactment obtainable for cash.

When the leading men of Canada are libelling through ignorance our dental institutions, when our Councils and Assemblies are passing laws every line of which is an injury to the profession and an injustice to the public, when a goodly proportion of our young men are, also through ignorance, passing by our colleges and going to foreign colleges, is it not evident that there is something wrong? The question is, where does the responsibility for this condition lie? If the Board of Directors of the Royal College had taken steps to enlighten the public in regard to that College, would that ignorance which is doing us so much damage exist? Undoubtedly not. If they had protested against former laws which discriminated against Canadians, would the Yukon Council to-day not know better than to repeat the discrimination? We say yes. Therefore, we must hold the lethargy of the Board responsible, and as a cure for the evil complained of we must insist that the cause be removed, and that the Board wake up to the business necessities of the College, take a hand in the work of gathering in students, and putting an end to this political anti-Canadian legislation. This done, we believe the Royal College will become, as it ought to, a Canadian college in every sense of the term, and such monstrosities as the Yukon and Territorial dental laws will become a thing of the past.

We know whereof we speak when we say that the leading dentists in the other provinces are ready and anxious to assist the Royal College. We know further that some of these dentists have on several occasions been perfectly amazed at the indifference to their own interests shown by the Board of Directors. Had the Board shown the activity it should have on several occasions, they would have received an assistance from others which would have made the duty of all light and have given success to efforts which proved abortive.

Political dentistry has a firm foothold in some portions of Canada. It has no legitimate place in our economy, and ought to be wiped out. We look to the Directors of the Royal College to initiate a movement which will put it out of existence.

W. D. COWAN.

ADVERTISING.

One of the earliest methods of advertising patent medicines was to obtain a great number of recommendations or testimonials from every source possible; this plan gave way later to what is deemed to be a better plan, that of getting an influential person in a community to use the drug, and then allow his or her name

together with their photograph, to appear at the head of a column or perhaps a page in a newspaper, describing the wondrous cure. Frequently we see the clergy figuring in the daily press in the capacity of the "cured." Not long since the picture of a dentist appeared in a daily as having been restored to his former vigor. Most professional men have gone along far enough in professional etiquette to look upon the giving of such testimonials with more or less disfavor, if for no other reason than the fact that the thinking person says to himself, we can rarely get something for nothing in this world, and therefore the man who got those testimonials must have given something for them, which throws some doubt as to their truthfulness. A thinking person doubts the more when he reflects that there are many persons in high places who make a charge for the use of their names in connection with business enterprises.

Now, let us see what the ethical professional man does and thinks he is right. He writes glowing accounts of marvellous results obtained from some person's "local anæsthetic," or perhaps it is some other drug. Not long since, a dentist reported the bad effects he had from chloretone, immediately we see a new crop of testimonials for this drug; and so it goes. There is hardly a dental instrument sold that has not a number of testimonials with it. Why cannot these testimonials be given at dental society meetings, where there is a chance for full discussion? The trouble is, the testimonials might go the wrong way in such public gatherings. The method of advertising these articles will shortly be changed to that of the ordinary patent medicine—only one testimonial at a time, and a large picture of the man who gave it. Let us look for the pictures of some of the leading physicians, surgeons and dentists of Toronto; and then we may all think, if we dare not say it, "How much is there in it?" What is the difference between giving a testimonial for somebody's pills and giving one for dental instruments or drugs?

THAT GOLD CROWN.

There seems to be a growing tendency in Toronto to make the all-gold crown an advertising medium. It is very questionable who it is gets the benefit of the advertisement. From the dentist's standpoint, he advertises the fact that his patients are among the questionable characters of the Levee, and that he wants more of the same. From the patient's standpoint she wants the shining tooth so that she may be distinguished from those who are not in her business. There was a time in Rome when all prostitutes or concubines had their hair bleached; so it is be-

coming in America that all such persons of the lowest type wear gold crowns on their front teeth. For those young dentists who do not know, or older ones for that matter, the above information is humbly given. Just think of the position in which an innocent woman or young girl is placed when her dentist places gold crowns in her anterior teeth. Is there a dentist so low or so anxious to get four dollars (for that is the price), that he will put a gold crown on the front tooth of a good woman, if he only knew what that mark indicates? We think not. Then let us see fewer of such sign-posts upon the anterior teeth of good women, and allow those persons to wear them who should.

AN APPEAL.

The following is an appeal to Canadians, and an introduction to a biography of the late Dr. W. George Beers, together with his memorable speech at a banquet given by the New York State Dental Association at Syracuse, October, 1888. The pamphlet may be had by addressing W. K. McNaught, 511 King Street West, Toronto, Canada:

DEAR SIR,—I take the liberty of sending you this pamphlet in the hope that you will give your practical endorsement to the project of perpetuating the memory of the late Dr. W. George Beers, of Montreal, "The Father of Lacrosse," and one of the most self-sacrificing and patriotic of Canadians.

The accompanying sketch of his life, hurriedly penned a few days after his death for publication in the *Toronto World*, will perhaps recall to you some of the principal incidents of his busy and well-spent life. In such a brief sketch, however, much has necessarily been left unsaid, but I trust that the incidents therein chronicled will satisfy you that he has not only deserved well of his country, but that it would advantage the national life of Canada to perpetuate his memory.

The lives of such men as Dr. Beers are a priceless heritage to the people of any country, and the perpetuation of their achievements in some public and enduring form will undoubtedly act as an incentive to generations yet to come to emulate their example.

So far as decided at present, it is the intention of the trustees of this fund to erect in the City of Montreal a suitable memorial to the late Dr. Beers, which will be worthy alike of the man and his patriotic work. The cost of such a memorial will be from \$10,000 to \$12,000, and the construction and design will depend upon the liberality of the response to the appeal.

In order to make this undertaking truly "national" in every respect, subscriptions are being solicited from lacrosse players and

others in every part of the Dominion from the Atlantic to the Pacific.

Lacrosse is now beyond question "Canada's national game," and for that reason "the Beers' memorial" should be truly national in its character, so that Canadians from every part of our great Dominion shall not only be able to point to it with pride, but have the satisfaction of claiming a share in its erection.

The project has been heartily endorsed by the press and prominent lacrosse players throughout Canada, and it only needs a prompt and united effort to bring it to a satisfactory issue.

Will you not contribute towards this patriotic undertaking, and honor yourself in helping to perpetuate the memory and life-work of one who did much for his country?

Very truly yours,

W. K. McNAUGHT.

Please address subscriptions for this fund to me at 511 King Street West, Toronto, Ont.

Editorial Notes

DR. J. W. ARMSTRONG, of Toronto, was married in August, 1901.

DR. J. W. HAGEY, of Elmira, Ont., has gone to Innisfail, N.W.T.

DR. GEO. PALMER, of Parkdale, has joined the noble army of benedicts.

DR. BURGESS, R.C.D.S., '95, Revelstoke, B.C., is holidaying in Ontario.

DR. W. E. WILLMOTT and family are spending a few weeks in Muskoka.

DR. A. E. MOONEY, class 1901, has begun practice at Van-
kleek Hill, Ont.

DR. NORMAN MILLER, of Fort Francis, is now practising in Tavistock, Ont.

DR. H. M. KLABFLEISCH, formerly of Tavistock, Ont., is now in Elmira, Ont.

THE Royal College of Dental Surgeons of Ontario opens October 1st, for the session of 1901-2.

THE Dental Board of Victoria, Australia, holds a meeting for the transaction of business *every month*.

DR. WASHINGTON BUCHANAN, of St. Catharines, was married September 11th, 1901.

The next meeting of the Toronto Dental Society will be held in the College building Tuesday evening, October 8th, 1901.

DR. GUY G. HUME, a member of the staff of the R.C.G.S., has just returned from a cruise among the thirty thousand islands of Georgian Bay.

THE *Dental Record*, of London, Eng., published two very interesting articles in the July and August numbers, on the origin of the title of L.D.S.

DR. F. J. CAPON's lectures on crown and bridge-work, which were delivered before the District Dental Conventions of Ontario will be continued in the next number.

MANY dentists throughout Ontario complain of having lost both gold foil and plate at the hands of a professional tramp thief. During office hours is the time of day selected to do the thieving.

THE Dental Society of Western Canada elected Dr. C. N. Johnson, of Chicago, an honorary member of their body at its recent meeting in Winnipeg. A great deal of the success of the meeting was attributed to the presence and efforts of Dr. Johnson.

The National Dental Association will meet at the Continental Hotel, Niagara Falls, in August, 1902. The National Faculties Association and the National Dental Examiners' Association will meet at Niagara Falls, 1902, the week previous to the National Dental Association.

FUSING point of Porcelain bodies:

Ash's high heat fuses at about 2600F.

Close high heat fuses at about 2600F.

Consolidated fuses at about 2500F.

Ash's low heat fuses at about 2400F.

Downie's fuses at about 1800F.

THE *Dental Record*, of London, England, for August, reports several cases of death from swallowing artificial sets of teeth, usually partials. One or two cases of gastrotomy are reported for the removal of plates from the stomach where the teeth had not been swallowed at all, and were afterwards found in the pocket of the patient's clothes.

WOULD it not be wise for the Board of the Royal College of Dental Surgeons of Ontario to have a complete history of the profession of Ontario, or Upper Canada, during its earlier times (say up to 1880) prepared, and kept among the other valuable papers in the hands of the Secretary. It will not be many years

until such a history will not be obtainable. Those who remember the earlier dentists and their doings will not always be with us.

If Commissioner Ross of the Yukon is correctly reported when he says that "most Canadian dentists are educated in their profession in the United States," he is in error, because over two-thirds of the dentists of Canada reside in Ontario and Quebec, and the laws in these provinces provide that every dentist must receive his dental education in the province in which he practises.

THE local Government Inspector of Workhouses in London, Eng., recently demanded that the teeth of the children be attended to by a competent dentist, and that the guardians make arrangements for the same. This demand is made so that boys may not be prevented from entering the army on account of the condition of their teeth. The Government of Great Britain looks after the soldiers of the future as well as those of the present.

The *New York Telegraph*, of August 4th, reports a suit of damages against one Dr. Starr for causing a double fracture of the "jaw-bone" of one Raymond while extracting two teeth. There may be some truth in the report, but the manner in which it is written up would indicate the elastic imagination of a reporter, besides a free advertisement for the prosecuting lawyer. It is safe to say that no damages will be collected if the accident occurred in the hands of a reputable dentist.

ALTHOUGH it does not appear in the Announcement by what means the Board of Directors of the Royal College of Dental Surgeons of Ontario intended to acquaint the profession and intending students outside of the Province of Ontario with the advantages of the Toronto school, yet they have recently done something. A copy of the College Announcement, and a separate page of information *re* the school has been addressed to every dentist in Manitoba and the North-West Territories.

TIC-DOULOUREAUX.—Augustus C. Bernays, A.M., M.D., Heidelberg, M.R.C.S., Eng., Professor of Anatomy and Surgery, Marion-Sims-Beaumont College of Medicine, St. Louis, in his report of the surgical clinic on "Neurectomy for Tic-Douloureux," complimentarily given to the members of the Mississippi Valley Medical Association states, after giving the history of the case and also describing the operation, that "Pain had been constant until the operation. The patient had strenuously avoided the use of narcotics, but during the more active periods of pain, two "Antikamnia and Codeine Tablets," were found to afford prompt and long-continued relief."—*Practical Medicine*.

Dominion Dental Journal

VOL. XIII.

TORONTO, OCTOBER, 1901.

No. 10.

Original Communications

LECTURES ON CROWN AND BRIDGE-WORK.

BY F. J. CAPON, D.D.S., L.D.S., M.D.S., TORONTO.

(Continued from August issue.)

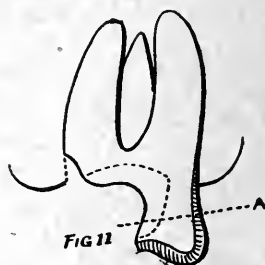
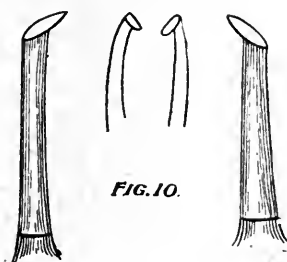
I have come to the more practical side of my lecture and will demonstrate by aid of the blackboard, etc., the simplest methods that will attain the best results. There are, of course, numerous ways of producing the same result, some more elaborate than others, but time will not permit me to indulge in them, and with experience and judgment I have been able to extract the most useful ideas and apply them in a practical manner.

A molar or bicuspid gold cap is perhaps the simplest, most useful, and most abused substitute of a natural tooth we have, but, like amalgam, it has been deprived of its merits for quick results.

Before I deal with the details of reducing or preparing a foundation for a gold cap, permit me again to draw your attention to the indication for a cap or crown: "when a tooth is so broken down by decay or fracture that its preservation by means of a filling material is out of the question," therefore a tooth may require more restoring than reducing to obtain a suitable foundation for a crown.

In preparing a remnant of molar for a gold cap too much emphasis cannot be made on reducing the sides to at least parallel (as indicated by Figs. 7, 8, 9). Considerable time and patience are necessary to properly prepare a molar for a cap, but you will find, after the enamel is removed, the side will then be parallel. Dr.

C. S. Case's enamel cleaving instruments are best suited for this (Fig. 10), but sometimes Dr. Evans' trimmers are used to good advantage. The next step in preparation is to remove any suspicious fillings, excavate the decay and refill with a good amalgam, and if the cavity extends below the gum margin, build up with amalgam flush and smooth that no shoulder will prevent the cap from being properly adjusted. These approximal cavities are often carelessly left open, allowing the intermediate to fill up these cavities, which are detrimental to the life or strength of the crown and also to the general fit. A molar shell (as Fig. 11) is a typical case for a crown, with a large posterior approximal cavity, in fact only a small portion of tooth tissue left. I consider the first step in preparation would be to excise at the dotted line *a*, using a fine and sharp pair of excising forceps, such as made by S. S. White, No. 106. These forceps are used a great deal; they are quick and effective, very considerably saving the patient from grinding down of tooth,



which is so nerve-racking to them. The walls of the tooth are then made parallel by means just mentioned. A measurement is taken and a German silver band is made to fit the root forming a matrix. At this stage the rubber dam may be applied if necessary; one or two canals are tapped to receive screw-posting, which stand at angles and opposite to any undercut obtainable (Fig. 12). The screw-posts are set in a small amount of cement, and amalgam is packed solidly about the posts until the whole matrix is filled, bringing away as much surplus mercury as possible.

After twenty-four hours the matrix can be removed, any sharp edges or surplus amalgam is also removed by sand-paper disks. This will render a foundation that is worthy of any crown, one that will stand the stress of mastication, with the chances of the foundational work disintegrating reduced to a minimum, and the possibility of dislodgment almost out of the question, owing to the friction of the crown to its foundation, with the help of a good intermediate that takes up any space. The restoration of root forms are more commonly dealt with in the anterior teeth and will

come before us later under that portion directed to porcelain. As many of us cannot take the time to complete the work of making the cap in the mouth of the patient, some accurate system should be got at whereby it can be made in the laboratory with equally favorable results, and I believe it can if accuracy is adhered to in taking impressions, measurements, bites and a perfect reproduction of the parts made in fusible metal. In gold caps and gold bridge-work, I believe that "Hollingsworth" has produced a system that fully fills the bill, and a dentist of average attainments can work with it successfully. For molars or bicuspsids a band is made the size of the root, but the first requisite of a band is that it shall fit absolutely, not approximately; the second requisite is that it shall not be irritating to the vital parts. This implies that the band shall not impinge on the pericementum, nor must it have any roughened edge or surface to irritate the overlying gum. It should grasp, but not irritate; a trifle over one-sixteenth of an inch in depth will be sufficient in the majority of

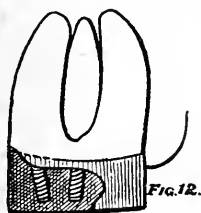


Fig. 12.

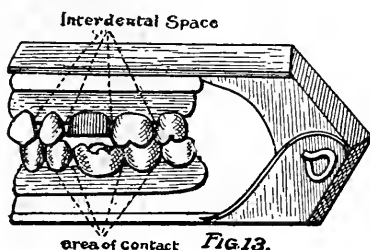
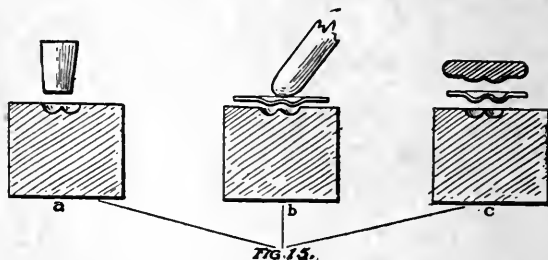
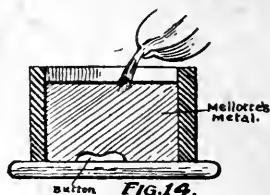


Fig. 13.

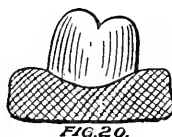
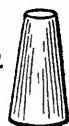
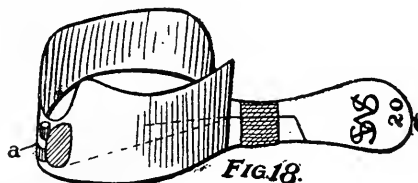
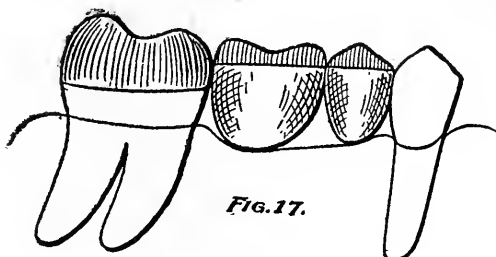
cases. A piece of plate is cut (22k, No. 29 or 30 gauge) by the measurement which has been taken with No. 35 or 36 nickel-plated iron or annealed brass wire by means of a dentrimeter. Cut the gold band a trifle scant of measurement to allow for stretching. File the edges perfectly square or true, apply borax, and place on inside of collar a very small piece of 20k solder, and fuse by holding band with fine tweezers in a small Bunsen flame or large alcohol flame. The band is ready to be festooned to fit the line of gum, and to receive its correct contour to bridge the interdental space (Fig. 13), making the area of contact perfect, so that food cannot impact into the inter-dental space, causing discomfort to patient and an abnormal condition of the soft tissues, often an engorged mass, no part of which can be touched without a profused hemorrhage. Place the band in the mouth or on the model (Fig. 13) and cut off on a line where the adjoining teeth begin to turn to form the cusp. Place a small piece of wax inside the band to assist in holding the cusp-button, which should be selected to fit the circumference of the band, to articulate properly, and to correspond in shape with the other teeth. If a cusp-button cannot be found to meet

the case in hand (which is rare) the cusps can be enlarged by placing mouldine on them and carved to your liking. There are several methods of carving the cusps, but unless it be done by the hand of an expert or artist the result is questionable; many so-called carved cusps are anything but anatomically correct and give a lateral stress that may defeat the object started out to achieve—the saving of the tooth. Remove the button and place it on a smooth metal surface with the cusp side up; place the small rubber ring (*c*) around it, with the button in the centre, and pour in a sufficient quantity of Mellott's metal to nearly fill the ring (Fig. 14). Start to pour the metal directly on top of the cusp, otherwise the flow of metal will force the cusp to one side and make an imperfect die. The metal die must be thoroughly cold before using, as it is



very brittle while hot. The button is taken out, which leaves a mould ready to form the gold cusp. Now take a piece of lead (Fig. 15*a*.) and with a hammer drive into the Mellott metal die to form a counter die. Anneal the gold plate, and start the swaging process by coaxing the plate into the die by hand pressure, using a piece of wood (Fig. 15*b*), which makes a depression for the lead counter-die to rest in. Then place the counter-die on the gold plate and drive to a partial fit. Remove the partially-formed cusp, pickle it, and again anneal it. Place the counter-die on the die without the gold plate, and drive it in with a smart blow; this will resharpen all the lines of the counter-die. Next replace the partly-formed gold cusp in the die, and again drive the counter-die into it for a perfect fit (Fig. 15*c*). Again pickle the cusps, and proceed to cut the surplus metal from it with shears, and rub down the under surface smooth on a file until it fits the band accurately.

Place flux on edge of the band and cusp and wire them together in the proper relation (Fig. 16), and hold over a lamp until soldered, Then finish in the usual way. If desired, solid gold cusps, incisors and cuspids can be made easily by this system. Although there are cases which demand a gold first bicuspid, cuspid and even a lateral or central, the indications for them are so rare that if one never places one his conscience would be freer, though his pocket not so full as his neighbor who brands a patient every day—a practice that might be termed criminal or diabolical, and displays about



as much judgment as an optician would to place a gold eye instead of a glass one.

Fac-simile crowns are made to serve for the abutment of bridges; third molars without occlusion are frequently used, and molars and bicuspid with occlusive surface worn down and still in close contact with its opposite. Under these conditions a strong band or partial cap would answer the same purpose. The fac-simile crown can be made in many different ways, but the following system is quick and very accurate, and insures a perfect fit. Of course the cervical portion of tooth must be reduced to at least parallel sides or the result is obvious, but if the abutment

be that of a molar or bicuspid that has the gum tissue receded, leaving very decided contours to reduce, or in other words, a wholesale mutilation of the tooth, a violation that takes place daily for the sake of making way for a crown—ruthless destruction for a base end—in such a case it is preferable to stop the caps where the contours end (Fig. 17); this will insure a fit and the satisfaction of knowing that portion of the tooth exposed can be kept in an hygienic condition. This does not hold good if the contoured part ends at the gum margin, in such a case it must be removed and the cap extend one-sixteenth of an inch below the margin.

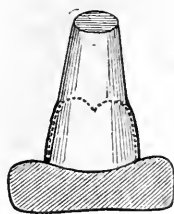


FIG. 21.

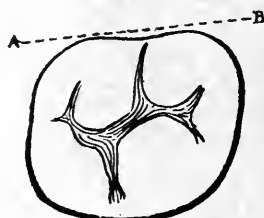


FIG. 22.

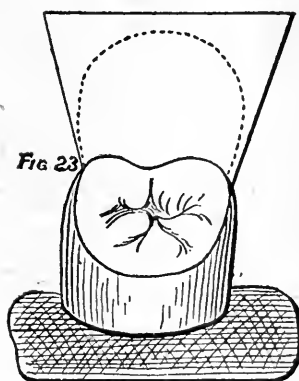


FIG. 23.

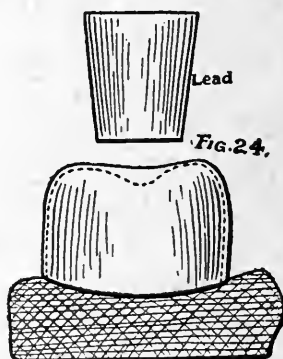


FIG. 24.

A measurement of the crown is taken in No. 35 wire and an accurate impression taken of the tooth in plaster. If the tooth is bell-shaped I have a hinged crown impression tray (Fig. 18) that enables one to take a perfect impression of any tooth or under-cut. A Mellott's metal cast is made from impression, which is carved down at festoon of gum to allow for cap going under free margin of gum when adjusted. A piece of crown gold plate, gauge 29 or 30 of 22k. is cut, to the length of measurement, being at least twice as wide as length of tooth; the edges are bevelled and trued so that it will make a decided cone (Fig. 19) which is soldered with 20k solder. The base of the cone is placed over the metal cast tooth (Fig. 20) and forced down, and with a small bench hammer and a flat piece

of wood it is driven home, stretching it over the die; the edge is festooned to the gum margin and it appears as Fig. 21. Now with the shears cut the cone on each side down as far as the die will allow point of shears to go; this will make two aprons of the cone. Trim off one side at length of die, leaving the apron on side of tooth having the straight side (Fig. 22, *a-b*). The apron is flattened out with pliers (Fig. 23) and pressed over the biting edge of the die until it touches the edge of band (at *c*) and by gently tapping the apron with a small hammer, when the line of the band will be made upon apron (at *d*), to which line the surplus is trimmed off and filed until it will go inside the band and butt the edges which are coated with the borax and a minimum piece of 30k solder placed at the joint and soldered. If the apron should have a tendency to spring up, it can be wired down. Now a lead hub is placed upon the biting surface of cap and swadged into the deep sulci and over the cusps (Fig. 24).

(To be continued.)

PRESIDENT'S ADDRESS.

BY F. A. STEVENSON, MONTREAL.

Read before Dental Association, Province of Quebec, September 4th, 1901.

Since our last meeting we have lost five of our members, among them William George Beers, one of the founders of this association and for many years its president. His brilliant intellect will be almost as much missed by the Dominion as a whole as by his *confrères* of his chosen profession. In its infancy this association depended almost wholly upon his exertions. He counted no obstacle too great to be overcome and no time too valuable to devote to its welfare. Like all men of genius he had a contempt for mere money-making, and his practice many a time and oft had to take care of itself if his presence were needed either in Quebec or at examinations. He saw the great gain that would come to us as dentists, both as scientific men and in our social position, if we could be induced to practise our calling as a profession rather than as a trade. Those who, in spite of his efforts, descended to methods at all doubtful he did not hesitate to brand as quacks and charlatans and to treat them to the most scathing satire. "He was a man; take him for all in all, we shall not look upon his like again."

You will have noticed in the report of the secretary that we have again had to oppose amendments to the Dental Act since last we came before you. This makes the eighth consecutive year in which the association has had to appear before the Provincial Legis-

lature. This condition of affairs seems to be becoming a habit on the part of certain persons who have some real or fancied influence with members of the provincial parliament.

The drain on our treasury has been so great that we are compelled to look for some means of increasing our reserve. I would earnestly commend to your consideration the advisability of increasing the annual subscription of the licentiates. While the Dental Act is no doubt a great protection to the public, it does not require any arguing on my part to convince you that we as licentiates would suffer far more than the public if the Act were set aside and unqualified men were allowed to practise without let or hindrance.

Another subject which we must consider is that of the position of the Dental College and Infirmary. Our college in this province will probably be a small one for some years to come because our matriculation requires a standard of general education equal to that required by medicine. Personally, I should be very sorry to see matriculation cut down in any way and I believe we are all unanimous in our wishes in this respect. We all would deplore any tendency to turn our college into a mill for the wholesale production of half-educated dentists, even if we could be assured that they would all be let loose into the great neighboring republic; but if our college is likely to be small, it is nevertheless our duty to give it the best possible equipment both in instruction and appliances. The work of the faculty has steadily improved from year to year and the infirmary clinics and operations are also improving and increasing in number. The Board of Examiners feel very strongly that an effort should be made at once to obtain financial support from the public either by an endowment or annual subscriptions. If we could be assured of an income exclusive of that derived from fees of students, amounting to \$5,000.00 per annum we could keep the infirmary open all through the year and also guarantee the members of the faculty and the other instructors an honorarium which would to some extent make up for the valuable time taken from office practice. I feel very strongly that we ought to be able to command the services of the leading men in the province and we cannot expect regular and punctual attendance from such men if they are morally certain that the time given to teaching means also a large sum cut out of their legitimate income. In dentistry it is more true than in any other profession that "we must make hay while the sun shines," for the years are not far distant from the youngest of us when our sight will begin to fail and our hand will lose some of its cunning. I am glad to say that we have many good and able men among us who are anxious and willing to devote time and care to the training of the students, but it is an impossibility for them to do themselves or their students justice unless they can count on a remuneration sufficient to cover the

actual money value of time lost from their practices. The legislature has allowed us to compel attendance at the college, but it also holds us responsible for its proper conduct and equipment. Let me impress upon you, as members of the Association, the necessity of doing what you can among your patients to aid us in the work of raising the needed funds.

We now come to a matter which I am well aware is looked upon by many with some feelings of misgiving, namely, that of Dominion Registration. The absurdity of the present state of affairs whereby men in good standing are not allowed to practise anywhere they please in the Dominion is manifest to all of us; but there is no doubt that the license to practise has been granted to many men who do not come up to the standard required to-day either in general or in dental education. It seems to me that an examination could be held which would require good general education and excellent dental education, both theoretical and practical, after four consecutive years of study. I would suggest that you instruct the Board to confer with the representatives of the other provinces and to report to you at the next annual meeting what plans they propose to adopt, so that this important matter should be in the hands of the licentiates, and so that there should be no undue hurry and no step taken without the full knowledge of every licentiate. We ought not to stop in this undertaking until the dental profession of the whole British Empire has adopted a common standard and until the license to practise enables the holder to practise anywhere within its limits. As dentistry on this continent is acknowledged to be in the lead, it follows that men coming from Canada would, if competent, at once command a good practice. I trust that we of this province will not hesitate to work for such a self-evident advancement.

BREACHES OF DISCIPLINE AS LAID DOWN IN BY-LAW NO. 5 OF THE QUEBEC DENTAL ASSOCIATION.

Among other things the following are deemed derogatory to the honor and dignity of the dental profession:

(a) Aiding or abetting, by a licentiate, in the violation of any clause of the law respecting the said profession in this province.

(b) Allowing, by a practising dentist, any person not being a licentiate, to practise said profession under his name or patronage, or under any name or style whatsoever in his office; or allowing a student or licentiate who has been convicted of any violation of the Act or By-laws to practise directly or indirectly, or place his name or sign in connection with the office.

(c) Entering, by such practising dentist, into an agreement with a rejected candidate for final examination, so as to enable him to unlawfully practise said profession or to evade the law respecting the practice of dentistry in this province.

(d) Allowing, by such practising dentist, a licentiate then suspended from the exercise of said profession to practise it under his name or patronage, or in his office under any name or style whatsoever, or entering with him into any agreement so as to enable him to unlawfully practise said profession, or to evade the law respecting the dental profession in this province.

(e) To publish any advertisement in any newspaper, magazine or other publication, other than a professional card setting forth his name, address and profession only, which card shall not exceed in length twenty lines of a single column in said newspaper, magazine or publication ;

(f) To advertise through any business firm, or to allow such firm to so advertise him ;

(g) To advertise under any name other than his own or under a corporate name or any firm name, whether by signs, or notices in the newspapers, magazines, or in any other medium :

(h) To post up any placards setting forth his name, address or profession in stores, street-cars or elsewhere, and to distribute pamphlets or circulars or other article containing any advertisement.

(i) Any dentist who shall directly or indirectly violate the above by-law shall be liable, for the first offence, to be suspended for one month ; for the second offence, to be suspended for six months ; for third offence, to be suspended for one year. A fourth offence shall entail the loss of the offender's license, if the Board so decides.

Proceedings of Dental Societies

DENTAL ASSOCIATION OF THE PROVINCE OF QUEBEC BOARD OF EXAMINERS.

SECRETARY'S REPORT, 1900-1901.

To the Licentiates in Dental Surgery of the Province of Quebec:

DEAR CONFRERES,—We have the honor to submit to you this third annual report, which contains the most important events which have occurred during the year. The Board has held fifteen meetings, and the attendance has been as follows: Dr. Stevenson, 15; Dr. Gardner, 15; Dr. Dubeau, 15; Dr. Ives, 15; Dr. Hyndman, 4; Dr. Bourdon, 8.

The events are recorded as nearly as possible in order of date.

On September 5th, at 10 o'clock a.m., was held in Laval University, at Montreal, our annual meeting. There were present: Drs. F. A. Stevenson, J. G. Gardner, A. S. Ives, G. E. Hyndman, J. Nolin, W. E. Bourbonnais, A. Lemieux, J. A. Jutras, W. G. Kennedy, F. H. Bradley, J. B. Morrison, C. F. Morrison, W. McLaren, L. J. Bloomfield, O. Pichette, R. J. Simpson, E. C. Martel, H. H. Kerr, R. L. Watson, M. Mercier, J. H. Springle, W. Geo. Beers, F. W. Brown, S. Globensky, L. J. B. Leblanc, J. H. Fortin, G. Maillet, G. Lemieux, F. Harwood, L. Trudeau, F. G. Henry, T. D. McGregor, B. S. Stackhouse, H. Lionais, T. D. Tansey, P. Brown, E. B. Ibbotson, J. A. Munroe, W. J. Kerr, J. E. Mauffette, J. B. C. Trestler, A. U. Gravelle, L. J. Franchère, J. A. Bazin, C. W. H. Rondeau, J. B. Vosburgh, D. J. Berwick, J. O. Brassard, A. Larocque, G. H. Kent—in all fifty.

Dr. F. A. Stevenson, President of the Association, occupied the chair, and Dr. A. S. Ives acted as secretary in the absence of Dr. E. Dubeau. The reports of the secretary and treasurer were adopted after some discussion. The notice of Dr. J. A. Bazin, as included in last year's report, was discussed and finally declared irregular. It will be reconsidered at the next annual meeting in September. The notice of motion reads as follows:

Proposed by Dr. J. A. Bazin: That the Board of Examiners shall grant the privilege to each and every student after two years' attendance on lectures and clinics at the Dental College and its affiliated Universities, the right to attend one or more sessions of the following Dental Colleges, their tickets being accepted as equal and of same force as the previous years: Royal College of Dental Surgery of Ontario, University of Buffalo, Chicago College of Dental Surgery, Forest University, Boston Dental College, Harvard

University and such others as the Board may declare and such other instruction as the members of the Association at its next annual meeting may decide.

Dr. Bazin also asked that the Board examine the powers conferred upon them by Art. 405*a*, and paragraph 4 of Art. 4058.

The notices of motion of the late Dr. W. G. Beers, as related in last year's report, were discussed at length; clauses 1, 3, 4 and 5 were rejected, and clause 2 withdrawn.

Four candidates were nominated to replace Drs. Bourdon, Ives and Hyndman, retiring from office. The ballot was as follows: Dr. J. H. Bourdon, 34; Dr. A. S. Ives, 22; Dr. G. E. Hyndman, 22; Dr. J. O. Brassard, 14 votes.

The President declared Dr. Bourdon elected for one year to complete Dr. Nolin's term, and Drs. Ives and Hyndman for three years. Drs. J. H. Fortin and T. D. McGregor were re-elected auditors.

On October 3rd, the semi-annual matriculation examination was held at the Dental College, Quebec, under the direction of Abbé Duckett, Mr. W. Dixon and the secretary of the Board. There were five candidates, and the result was as follows: Passed on sciences: E. C. Hutchison, G. G. Armitage and A. H. Edwards. Passed on classics: Horace Drouin. Mr. Hutchinson having passed on classics at a previous examination was granted a certificate of matriculation. Drs. Wm. Watson and F. E. Skinner, who obtained their D.D.S. diploma in the spring, but whose time of indenture expired in the fall, received their license at the Board meeting on October 8th.

On the 10th of October the Board was notified of Dr. A. H. Beers' retirement from practice; in consequence, his name has been scratched out from the roll.

On December 27th, a meeting of Montreal dentists was held at the Dental College, Quebec, on the occasion of Dr. W. Geo. Beers' death. Dr. J. A. Bazin was in the chair and addressed a few words. Resolutions of sympathy were adopted and it was unanimously decided to send flowers as a token of esteem.

At the examination held at the Dental College, Quebec, this spring, for the title of doctor in dental surgery, there were twenty candidates, of whom sixteen have been successful. The assessors were Drs. Ives and Dubeau, who remarked that the students were better prepared than at the preceeding examinations. The names of those who passed are as follows: N. Desjardins, B. A. Planche, J. N. P. Fournier, A. D. Angus, J. E. Dohan, J. R. Brown, H. L. Troutbeck, C. DePencier, R. H. Somers, E. H. Brown, W. D. Smith, D. McHarg, E. J. T. Stuart, G. Briggs, W. J. Rowell, R. E. Elliott.

On the 3rd of April, the regular annual meeting of the Board for examination of candidates was held. Eight presented themselves for matriculation and eleven for final. Abbé Duckett and

Mr. W. Dixon were in charge of the matriculation examination, and the result was as follows: Passed on both groups: Jacob Rubin and Ed. Elkan. On classics: G. G. Armitage, S. Ship and E. Lafortune. Mr. Armitage having previously passed on sciences, was given a certificate of matriculation together with Messrs. J. Rubin and E. Elkan.

Of the eleven candidates for license, only four were successful, namely: F. H. A. Baxter, L. Forest, J. C. St. Pierre and A. D. Gareau.

At the primary examinations on physiology, anatomy and chemistry at Bishop's University, Drs. Ives and Dubeau acted as assessors.

At its annual meeting in April, the Board reappointed the same members on the Faculty of the Dental College, Quebec.

During the year illegal practice has decreased considerably; no legal action has been necessary, but several letters of warning have been sent and proved sufficient.

During the year we have lost several of our confrères by death, namely: Drs. W. G. Beers, S. J. Andres, H. Pepin, T. Fitzpatrick, P. P. Vosburgh and Armand Rioux, a dental student.

Four foreign dentists applied this year to Quebec Parliament for private bills, namely: F. H. A. Baxter, J. D. E. Barras, Stanley Burns and S. R. Martin. The Board opposed them, but could not have them refused; we succeeded in demanding that they should pass the primary and final examinations.

The most important event of the year has again been the effort made to amend our law during the last session of the Legislature. At that time, a circular was sent you explaining the nature of the amendments, so it is not necessary to mention them in this report, but what we wish to let you know is that we have succeeded in having them rejected by an immense majority, the vote being fifty to twelve. The delegates to Quebec were Drs. Dubeau and Ives.

At the annual meeting of the Association, you will be presented with a scheme from Dr. S. McInnis, M.P.P., a dentist in Manitoba, tending to establish a Dominion Dental Council, which would deliver a license entitling the bearer to practise all over the Dominion of Canada; this scheme will be submitted to you for discussion.

The annual meeting of the licentiates will take place in Montreal, at Laval University, on Wednesday, September 4th, at 9 o'clock a.m.

The members retiring from office, but who are eligible for re-election for three years are Drs. J. H. Bourdon and J. G. Gardner.

Respectfully submitted,

EUDORE DUBEAU, L.D.S., D.D.S.,
Secretary D.A.P.Q.

QUEBEC DENTAL ASSOCIATION.

The annual meeting of the Dental Association of the Province of Quebec was held in Laval University, Wednesday, September 4th, 1901, at 10 a.m. About fifty members were present. The entire business of the Association was concluded in about two and a half hours. The reports of the secretary and treasurer were accepted without discussion. The Board was authorized to continue correspondence concurring in Dominion registration. The Board was also authorized to raise the annual fee from two to five dollars, and suspend any dentist's license to practise who neglected to pay his dues. There were no clinics or scientific papers.

The officers elected were: President, F. A. Stevenson; Vice-President, J. H. Bourdon; Secretary, E. Dubeau; Treasurer, R. L. Watson; Registrar, A. S. Ives.

The regular session of the College will open Tuesday, October 1st, for the year 1901-02. The semi-annual examinations were held September 28th and 29th. A report will appear later.

REPORT OF THE FOREIGN RELATIONS COMMITTEE OF THE NATIONAL ASSOCIATION OF DENTAL FACULTIES FOR THE YEAR 1900-1901.

Reported and adopted at the eighteenth annual meeting, held in Milwaukee, Wis., August, 1901.

The past year has been an exceedingly active one for the Foreign Relations Committee, and the correspondence has been very large. We believe that the influence of the National Association of Dental Faculties has been materially extended during the year, and the good work that has been accomplished by it is becoming more widely known both at home and abroad.

FOREIGN DENTAL SCHOOLS.

In the face of the fact that a most determined effort is being made in some foreign countries to break down the reputation of American dental schools, and to discredit all American professional education, and in the knowledge that not only are our courses refused any consideration, but sometimes made a pretext upon which to forbid Americans to enter upon practice, this association cannot be accused of illiberality or of professional narrowness should it decline to accept foreign qualifications as a sufficient warrant for practice in this country. There should be some kind of

reciprocity in professional affairs, and Americans ought not to be expected to extend all the professional courtesies granted. And yet, exact justice might, in the minds of many, demand that, irrespective of what may be done to us, we should be forgiving, and in return for the buffetings that we receive humbly expose the other cheek to the smiting hand. That course is perhaps highly Christian, but it is not quite in accordance with the impulses of an ordinary human nature. The man or the school that does not have sufficient of self-respect to maintain inalienable rights can scarcely expect to receive the consideration which may be honestly due.

But were this the only reason to be urged against the unquestioned acceptance of all foreign qualifications, we might justly be called churlish and professionally illiberal were we to exclude any one who asked our recognition. America was the first to establish any system of dental education. It embraced a full course of instruction, the whole of which must be covered within the walls of a duly chartered institution devoted to dental instruction. It was provided that all work leading to our special degree must be done under the direct supervision of qualified and accepted teachers. Recognizing the prosthetic department as one of the most important in dental practice, we insisted that it must have a scientific basis, and not be a matter of mere empiricism. We established the principle that our students must be under the pupilage of one who was acquainted with mechanical laws, and that the teaching of physical science should not be entrusted to possible charlatans. The instructor in mechanics must be responsible to the authority which granted the diploma or certificate of qualification.

The opposite course was pursued in founding the dental system of education in some other countries. Recognizing that many skilful mechanics were outside the pale of the fully qualified men, they practically excluded prosthetics from the college curriculum, classed mere mechanical skill as handicrafture, and permitted its instruction to be received at the hands of irresponsible men. They established a system of apprenticeship which in a manner bound out the student to a dental mechanic, who should give him instruction in one of the most important departments of dentistry. It could not be expected that we should accept such instruction as the equivalent for our full college courses. This condition was the most embarrassing question that came before your committee in the attempt to establish a system of equivalents. Our schools refuse to give to an American student any advanced standing for time spent in the laboratory or office of a practitioner who has not teaching experience and responsibility. The matriculant may have passed years in a dental office, but he must join the freshman class on entering our colleges. Our diplomas or certificates are only granted upon the completion of a definite scholastic course. Occa-

sionally some one has urged that merit and knowledge and skill should be recognized wherever found, and without reference to their source. But that is the very pretext urged by the fraudulent and short-term schools for the granting of their honors after an incomplete course, they themselves conducting the examination, and being the sole judges of that skill and merit.

Why American colleges or college men should desire to shorten the usual term is past comprehension, for it is prejudicial both to their educational and their financial interests. A degree is granted as a reward for the completion of a full course. It is not a recognition of merit. No two men reap the same advantages from a given amount of instruction. One man graduates a skilled, dexterous practitioner, while another is much his inferior. But both have earned their diploma by having successfully completed a prescribed course of study. Many men in the profession do not comprehend this, and blame the schools because a graduate is not as clever and expert in his technical manipulation as the experienced practitioner. Our schools demand the successful completion of a definite course in mechanics. We cannot recognize the qualifications of any man who has not complied with a reasonable requirement that is demanded of our own graduates. We cannot accept the course of any school that does not require this, and your Foreign Relations Committee has not recommended as the equivalent for ours the certificates of any such schools. The most that we can do for those that accept the apprenticeship system as a part of their course is to give one year's advanced standing for the completion of a full and complete three or four years' pupilage with final graduation.

Under our present legislation it is illegal and irregular for any member of this association to admit to its senior class any student who has not at least the following qualification:

Successful completion of two full terms in a dental school *whose course has been accepted by this association as a full equivalent for its own*, and who shall by that school be recommended for such advanced standing.

Admission to the second or junior class of any of our schools can only be permitted to those who have one of the following qualifications:

(1) Successful completion of one full term in a dental school whose course has been accepted by this association as a full equivalent for its own courses, the student being by that school recommended for such advanced standing.

(2) Successful completion of the full course of some regular and duly accepted medical school, and graduation with the degree of Doctor of Medicine.

No partial courses are accepted, nor those spent in a school not fully and definitely recognized by this association. Surely we can-

not grant more than this to those making application from foreign countries while denying it to our own people.

This principle has governed the Foreign Relations Committee in making its recommendations for the recognition of foreign schools. There have been urgent requests for such recognition, but your committee has not felt itself at liberty to recommend what is not granted to our own schools and people. If any foreign school will demonstrate that its curriculum of study is the full equivalent of our own, and that it has complied with the statute of minimum requirements established by this association at its last annual meeting, your committee will be prepared to examine its claims and to recommend such action to this association as the course of study seems to warrant.

Your committee, in conclusion, points with no ordinary pride to what has been accomplished within the past five years as the result of an attempt to regulate our relations with foreign schools and foreign students, and to the high professional ground on which we now stand. There should be no further complaints, on the one hand, that we accept unqualified men from abroad, or, on the other, that foreigners can come here and, without going through the full course demanded of American students, carry off our honors and claim to be American dentists, the colleagues of those who have completed our full curriculum of a broad course of dental study.

The foreign advisory boards, appointed with the approval of this association, have proved to be useful auxiliaries in the carrying out of our system of education. In Europe they have completed an organization, and will henceforth work together in harmony. They must exercise an important and wide influence in educational affairs, and their action cannot but be for good. They will guard the interests of those holding the American degree, and help to prevent it from being unworthily conferred. Your committee has made some further appointments in countries heretofore unrepresented, which it reports for approval. It is very much to be desired that at each of our annual meetings representatives from these foreign advisory boards should be in attendance whenever possible, and we recommend the enactment of a standing resolution giving to such regular representatives a seat in our meetings with the usual privileges of the floor.

REPORT CONCERNING FOREIGN EQUIVALENTS AS AMENDED FOR THE YEAR 1901.

Were your committee to follow the precedent set by most foreign countries, no consideration would be given to their qualifications. Although America set an example to all the world in establishing a definite curriculum of instruction for dentists, in organizing schools for their theoretical and practical training,

thereby erecting into a recognized profession or specialty that which previously was mainly empiricism and charlatanry, no official recognition of its special curriculum has ever been given by the dentists of foreign countries, although in great numbers they have attended our schools to obtain the advantages offered by that curriculum.

Your committee believes it to be neither fraternal, professional, nor just to adopt the same course, but thinks it both expedient and right to extend proper recognition to whatever can be received as an equivalent for our own courses. It must not be forgotten, however, that the system of dental instruction in Europe varies very widely from that of our special American schools. Instruction separate from that afforded by the medical schools or universities is very rare, and the practical training which forms a part of our curriculum is usually given by private preceptors. Your committee does not feel at liberty to recommend the acceptance of an oral and theoretical course as the equivalent for one including practical work. We cannot believe that the certificates of private and irresponsible practitioners can by us be accepted as any part of a college course, and hence we have given them little consideration.

Australia.

A very complete report from the various colonies of Australia and New Zealand has been made by the advisory board appointed for those countries. It would appear that in most of the colonies there is no dental legislation, but Victoria has lately secured a law analogous to that of England, and in Melbourne a dental school has been organized whose curriculum, from the partial syllabus furnished, seems to be a comparatively broad one. The institution has been but recently established, and your committee has been unable as yet positively to determine whether in all respects it complies with our minimum requirements. When this shall have been definitely determined, we shall be prepared to recommend to this body some proper action.

In the province of Western Australia and Tasmania no dental legislation has been secured.

There is a dental law in New Zealand, and the member of the Advisory Board from that province has furnished your committee with an abstract of it. There are no dental schools in the province.

Switzerland.

This a republic analogous to our own country in some respects, the federal union being composed of separate cantons. There are some excellent universities which offer certain facilities for dental study, but their practical instruction, we believe, cannot be accepted

as an equivalent for that offered by American dental colleges. Your committee recommends that holders of the Swiss national diploma be given one year's advanced standing in the schools of this association, but that no consideration be at present extended to holders of the cantonal qualifications.

Spain.

The Spanish requirements in medicine are very high, but your committee has not learned that there are any dental schools, or dental departments of universities, whose course of instruction can be accepted as the full equivalent for the instruction given in American dental colleges.

France.

In accordance with the recommendations of the advisory board for this country, your committee recommends as follows :

That one year's advanced standing be given to students possessing the French government diploma of "Chirurgien Dentiste" who have completed the three years' course in either the "Ecole Dentaire de Paris" or the "Ecole Odontotechnique," and that the same consideration be given the French diploma of Doctor of Medicine.

That in all cases the American preliminary examinations as to educational requirements be demanded, and that a sufficient acquaintance with the English language to enable the student to comprehend lectures be an essential.

Germany and Austria.

Your committee recommends that students speaking the English language, who have taken the full dental course in German or Austrian universities, be eligible for reception in the second-year classes of American dental colleges, provided it be shown that they have had at least two semesters of competent college instruction in practical laboratory and operative work.

Italy.

There are, we believe, no schools in Italy which have courses that can be accepted as equivalent to those of our American dental schools. The instruction given in the medical schools your committee believes to be too exclusively general in its character to form an acceptable course in dentistry for American students.

Holland and Belgium.

In these countries the title of dentist is obtained by passing a practical examination in the theory and practice of dentistry.

There are no separate dental schools, and we are not sufficiently informed of the comprehensiveness of the syllabi of the universities to offer any recommendations concerning them.

Great Britain.

Your committee recommends that all students who shall have finished the complete course in any recognized English, Irish, or Scotch dental school or hospital, shall be eligible for reception as second-year students in American dental colleges upon proof of their having taken as a part of such foreign course two years of instruction in a properly equipped dental laboratory and dental infirmary connected or affiliated with such dental school or hospital, and which requires the successful completion of the work deemed essential by recognized American schools, as formulated in the minimum requirements for foreign dental schools accompanying this report. We further recommend that for the present no consideration be given to partial courses in any of the dental schools of Great Britain.

Denmark, Sweden and Norway.

Sweden has one dental school, which is the dental department of the Caroline Medico-Chirurgical Institute of Stockholm. Instruction is given by five professors of the medical department, and there are three dental professors, occupying respectively the chairs of dental surgery, operative dentistry, and dental prosthetics and orthodontia. From the assurances given, your committee believes that its graduates should be permitted to enter the second-year class of recognized American dental colleges, provided they shall have complied with our requirements concerning mechanical laboratory work.

Your committee has not sufficient knowledge concerning any school in Denmark or Norway to warrant further recommendations at present.

Japan.

There is one dental school in Japan. It confers no degree, but gives a certificate which entitles the holder to government examination, the same as if he had studied with some practising dentist. As the instruction is personal and the school is quite irresponsible, your committee believes that no consideration can be given to those completing its course.

Mexico.

There is a medical school in the City of Mexico which purports to give dental instruction. Your committee cannot learn that it is

of such a character as will enable it to be accepted as the equivalent for a course in an American dental college.

Canada.

There is but one school in the Dominion, as far as your committee is aware, whose courses can be accepted as an equivalent for those of our own colleges, and that is at present a member of this body, so that it requires no special ruling.

Other Foreign Countries.

Concerning the educational status of other nations, your committee is not in possession of sufficiently definite information to warrant any action whatever. We have no knowledge of the existence of any courses of instruction which can be accepted as an equivalent for the courses in the institutions having membership in this body, and therefore advanced standing in our schools cannot in justice to our own students be granted save in the instances above enumerated.

REPORT CONCERNING MINIMUM REQUIREMENTS.

That a proper standard may be adopted by which the relative value of the courses in foreign dental schools whose students offer them as equivalents for a part of the instruction given in the colleges of this association may be determined, your committee recommends the approval of the following as the minimum of requirements demanded :

1. The college must require of matriculants a preliminary education which is the full equivalent of that demanded by the schools of this association.
2. The college must demand of students full attendance upon at least three full annual courses (not semesters) of lectures of not less than seven calendar months each in separate years, covering all the studies proper to a full dental curriculum.
3. The college must possess a bacteriological laboratory, with sufficient of equipment for instruction in a competent course in bacteriology, which must form a part of its curriculum of study.
4. The same must be required in chemistry, histology and pathology.
5. There must be a technic laboratory in which shall be taught the proper manipulation for the insertion of all kinds of fillings for teeth, the preparation and filling of the roots of teeth, the tempering and shaping of instruments, the drawing of wire and tubing for cases in orthodontia, and the cutting of bolts and nuts.
6. There must be prosthetic laboratories sufficiently equipped

for teaching all kinds of prosthetic work, and the construction of all the approved prosthetic appliances.

7. There must be a sufficiently equipped laboratory for instruction in making crowns and bridges, and the construction of appliances used in orthodontia.

8. There must be a properly equipped infirmary or surgery for the reception of patients, upon whom each and every student shall be required individually to perform all and enough of the operations necessary in dental practice thoroughly to qualify him for the successful pursuance of his profession.

9. Complete records of the work done by each student, of his attainments at sufficient and full examination in each subject of the curriculum of study, of his attendance and deportment during the course, must be permanently kept.

10. No credit must be allowed for any work not done under the immediate supervision of instructors connected with or especially approved by the college, and who are in direct affiliation with the faculty.

FOREIGN ADVISORY BOARDS.

The following is a list of the countries for which advisory boards have been designated, and the appointments and nominations so far as made:

COUNTRY.	NAME.	COLLEGE.	POST OFFICE ADDRESS.
Great Britain.....	Wm. Mitchell, D.D.S.....	Univ. of Michigan.....	39 Upper Brook St. London, England.
" "	W. E. Royce, D.D.S.....	Phila. Dental Coll.....	2 Lonsdale Gardens, Tunbridge Wells, England.
" "	B. J. Bonnell.....	.....	94 Cornwall Gardens, So. Kensington, London.
Holland and Belgium....	J. E. Grevers, D.D.S.....	.....	13 Oude Turfmarkt, Amsterdam, Holland.
" "	Ed. Rosenthal, D.D.S.....	Harvard Univ.....	19 Boul. du Regent, Brussels, Belgium.
" "	C. Vander Hoven, D.D.S.....	.....	Der Haag.
Denmark, Swe. & Norway	Elof Förberg, D.D.S.....	Phila. Dental Coll.....	Sturegatan 24, Stockholm, Sweden.
" "	S. S. Andersen, D.D.S.....	Univ. Pennsylvania.....	Christiania, Norway.
" "	L. P. Vorslund-Kjaer, D.D.S.....	Phila. Dental Coll.....	Copenhagen, Denmark.
Russia.....	H. V. Wollison, D.D.S.....	N. Y. Coll. Dent.....	10 Quai de l'Amaranti, St. Petersburg, Russia.
" "	Theo. Weber, D.D.S.....	N. Y. Coll. Dent.....	Helsingfors, Finland.
" "	Geo. T. Berger, D.D.S.....	Phila. Dental Coll.....	St. Petersburg, Russia.
Germany.....	W. D. Miller, D.D.S.....	Univ. Pennsylvania.....	Victoriastrasse 30, Berlin, Germany.
" "	C. F. W. Bodecker, D.D.S.....	N. Y. Coll. Dent.....	55 Unter den Linden, Berlin, Germany.
" "	Freidrich Hesse, D.D.S.....	N. Y. Coll. Dent.....	Goethe Str. 6, Leipzig, Germany.
Austria and Hungry	Otto Szigmondi, M.D., Ch.D.	Univ. Vienna	Schmerlingplatz 22, Vienna 1, Austria.
" "	Rudolf Weiser, M.D., Ch.D.	Univ. Vienna	Frankgasse 2, Vienna IX, Austria.
" "	Dr. Jos. Arkövy	Univ. Buda-Pesth	Vaczi-utca, Budapest, Hungary.
Italy and Greece	Albert T. Webb, D.D.S.....	Univ. Pennsylvania.....	87 Via Nazionale, Rome, Italy.

COUNTRY.	NAME.	COLLEGE.	POST OFFICE ADDRESS.
Italy and Greece.....	Tullio, Avanzi.....	Nominated .....	.....
" "	A. V. Elliott, D.D.S.....	Univ. of Mich.....	70 Via Tornabuoni, Florence, Italy.
France.....	J. H. Spaulding, D.D.S....	Univ. of Minnesota....	39 Boul. Malesherbes, Paris, France.
"	George B. Hayes, D.D.S....	Univ. of Mich.....	Paris, France.
"	G. A. Roussel, D.D.S.....	N. Y. Coll. Dent.....	74 B'd Haussmann, Paris, France.
Spain and Portugal.....	R. H. Portuondo, D.D.S....	Univ. Pennsylvania....	Paseo de Recoletos 3, Madrid, Spain.
" "	Florestan Aguilar, D.D.S....	Phila. Dental Coll....	Serrano 5, Madrid, Spain.
" "	T. J. Thomas, D.D.S.....	.....	Bilboa, Spain.
Switzerland and Turkey.	L. C. Bryan, D.D.S.....	Boston Dent. Coll....	St. Alban Anlage, Basel, Switzerland.
" "	Theo. Frick, D.D.S.....	Univ. Pennsylvania....	14 Tonhallenstrasse, Zurich, Switzerland.
" "	Paul J. Guye, D.D.S.....	Penn. Dent. Coll.....	12 Rue de Candolle, Geneva, Switzerland.
Japan, China and India..	.....	.....	.....
" " "	J. Ward Hall, D.D.S.....	.....	Shanghai, China.
Australia & New Zealand	Alfred Burne, D.D.S.....	Phila. Dental Coll....	1 Lyon Terrace, Liverpool Street, Sidney.
" "	Dr. A. P. Merrill.....	Phila. Dental Coll....	52 Collins St., Melbourne.
" "	Herbert Cox, D.D.S.....	Univ. of Michigan....	216 Queen St., Auckland, New Zealand.
Cuba & W. India Islands.	.....	.....	.....
" " "	Rice R. Buchanan, D.D.S..	.....	47 San Francisco St., San Juan, Porto Rico.
" " "	A. E. Mascort	Nominated	Havana, Cuba.
Mexico & Cent. America.	H. W. F. Buttner	Nominated	City of Mexico.
" " "	J. W. Purnell.....	Nominated	Merida, Yucatan.
" " "	J. Hunter	Nominated	Puerto Cortez, Honduras.
Venez., Colom. & Ecua'r.	Manuel V. Toledo	Nominated	Caracas, Venezuela.
" " "	J. R. Martinez	Nominated	Guayaquil, Ecuador.
Peru, Bolivia and Chile..	Charles B. Davies, D.D.S..	Penn. Dent. Coll.....	49 Plaza Anibal Pinto, Valparaiso, Chile.
" " "	S. R. Salazar, D.D.S.....	Chicago Coll. Dent. Sur.	Lima, Peru.
" " "	C. W. Sparrock, D.D.S....	Nominated	Lima, Peru.
Brazil and Guiana	J. L. Fordham	Nominated	Rio de Janeiro, Brazil.
" " "	Julius Weinburger	Nominated	Para, Brazil.
" " "
Argentina, Para. & Uru..	J. S. Burnett.....	Nominated	Salto, Uruguay.
" " "	J. C. Macartney	Nominated	Montevideo, Uruguay.
" " "

MEMBERSHIP OF THE NATIONAL ASSOCIATION OF DENTAL FACULTIES, AT ADJOURNMENT, JULY, 1901.

The following is a list of the dental colleges of America which at the present time are members of the National Association of Dental Faculties, whose diplomas and tickets alone are recognized and received by the members of the association :

Alabama	Birmingham	Birmingham Dental College.
California	San Francisco....	Dental Dept. of College of Physicians and Surgeons.
"	San Francisco....	University of California, College of Dentistry.
"	Los Angeles.....	College of Dentistry, Univ. of Southern California.
Colorado.....	Denver	Colorado College of Dental Surgery.
District of Columbia.....	Washington.....	Dental Department of National University.
"	Washington.....	Dental Department Columbian University.
"	Washington.....	Dental Department of Howard University.
"	Washington.....	Georgetown University, Dental Department.
Georgia	Atlanta	Atlanta Dental College.
"	Atlanta	Southern Dental College.
Illinois	Chicago	Chicago College of Dental Surgery.
"	Chicago	College of Dentistry, University of Illinois.

Illinois.....	Chicago.....	Northwestern University Dental School.
Indiana.....	Indianapolis.....	Central College of Dentistry,
".....	Indianapolis.....	Indiana Dental College.
Iowa.....	Iowa City.....	University of Iowa, College of Dentistry.
".....	Keokuk.....	Keokuk Dent. Col., Dent. Dept. of Keokuk Med. Col.
Kentucky.....	Louisville.....	Louisville Col. of Dentistry, Dept. of Cent. U. of Ky.
Louisiana.....	New Orleans.....	New Orleans College of Dentistry.
Maryland.....	Baltimore.....	Baltimore College of Dental Surgery.
".....	Baltimore.....	Baltimore Medical College, Dental Department.
".....	Baltimore.....	Dental Department University of Maryland.
Massachusetts.....	Boston.....	Dental School of Harvard University.
".....	Boston.....	Tuft's College Dental School.
Michigan.....	Ann Arbor.....	Dental College University Michigan.
".....	Detroit.....	Dental Department Detroit Medical College.
Minnesota.....	Minneapolis.....	College of Dentistry, Dept. of Med., Univ. of Minn.
Missouri.....	Kansas City.....	Kansas City Dental College.
".....	Kansas City.....	Western Dental College.
".....	St. Louis.....	Marion-Sims Dental College.
".....	St. Louis.....	Missouri Dent. College, Dent. Dept. of Wash. Univ.
Nebraska.....	Omaha.....	Dental Department University of Omaha.
New York.....	New York.....	New York College of Dentistry.
".....	New York.....	New York Dental School.
".....	Buffalo.....	University of Buffalo, Dental Department.
Ohio.....	Cincinnati.....	Cincinnati College of Dental Surgery.
".....	Cincinnati.....	Ohio College Dental Surgery.
".....	Columbus.....	Ohio Medical University, Dental Department.
".....	Cleveland.....	Western Reserve University, Dental Department.
Oregon.....	Portland.....	North Pacific Dental College.
Pennsylvania.....	Philadelphia.....	Dental Department University of Pennsylvania.
".....	Philadelphia.....	Medico-Chir. College of Phila., Dept. of Dentistry.
".....	Philadelphia.....	Pennsylvania College of Dental Surgery.
".....	Philadelphia.....	Philadelphia Dental College.
".....	Pittsburg.....	Pittsb. Dent. College, Dept. of West. Univ. of Pa.
Tennessee.....	Nashville.....	Dental Department, University of Tennessee.
".....	Nashville.....	Department of Dentistry of Vanderbilt University.
".....	Nashville.....	Sch. of Dent. of Meharry Med. Col., Dept. of C. T. Col.
Virginia.....	Richmond.....	University College of Med. and Surgery, Dent. Dept.
Wisconsin.....	Milwaukee.....	Milwaukee Medical College, Dental Department.
Canada.....	Toronto.....	Royal College of Dental Surgeons of Ontario.

WILLIAM C. BARRETT, 208 Franklin St., Buffalo, N.Y.

J. D. PATTERSON, Ninth and Walnut Sts., Kansas City, Mo.

TRUMAN W. BROPHY, 126 State St., Chicago, Ill.

M. W. FOSTER, 9 W. Fayette St., Baltimore, Md.

EUGENE H. SMITH, 283 Dartmouth St., Boston, Mass.

Foreign Relations Committee.

Selections

DENTISTS MAY PRACTISE WHAT THEY ARE TAUGHT.

In discussing a paper on the teaching of dental materia medica Dr. Brophy said: I was very glad to be present yesterday, and hear the paper of Dr. Peck, and I cannot say too much in commendation of it. The teachings of the paper, it seems to me, are sound.

Some of the remarks that were made in discussing it surprised me a little. In fact, they surprised me not a little. I wondered, while some of the gentlemen were speaking, what are the objects of certain chairs of our schools? For instance, why do we have a teacher who engages so much of the time of the students in presenting the subject of materia medica and therapeutics, if it is not for the purpose of qualifying these men to make use of the remedies and the methods of procedure that he advocates? If it be true that the dentist should not prescribe remedies, if it be true that he should not make use of the drugs that he is taught to use, and use them in a way that the professor explains, then such a chair should be abolished, because it is not fair to take up the time of young men sitting on the benches and paying their fees for instruction, in teaching them certain departments of science which they, through the law, as was said, cannot employ after they graduate. I hold that every chair, that every department taught in a dental college, is taught in good faith on the part of the teacher and of the institution, and that the student who expects to receive this instruction is qualified to use it after he gets it, and, I repeat, if he cannot, by restriction of the laws of a state, or of the nation in which he lives, use what he has learned, then the chair should be abolished. I hold that a man who receives instruction in the administration of remedies or in the performance of surgical operations, or anything else in any of our dental colleges, has the right to make use of it, and if he makes mistakes he is amenable to the laws of the state for malpractice. It is not a question of possessing the degree of M.D. at all; that has nothing whatever to do with it. In England the surgeons have not those degrees in all cases. They have their qualifications, however, as surgeons. They practise surgery; they do it under the laws, and if they make mistakes, they are punished according to the laws. The laws of our states have chartered our institutions to go on and teach certain branches, and if they teach those branches the laws of the state will protect the man who goes out to make use of his knowledge. There is a mistaken idea, it seems to me, of what the degree of doctor of medicine empowers a man to do who possesses it.

A member—You mean doctor of dentistry.

Dr. Brophy—I meant exactly what I said. The degree of doctor of medicine, what does it empower a man to do? Would any one assume for one moment—I would, perhaps, better relate a little experience I had in Philadelphia a few days ago, when Dr. Kirk was discussing with me this very question. He said one of the most distinguished members of the medical faculty told him, about eight or ten years ago that the degree of doctor of dental surgery was an evidence of a partial culture only, or a partial education, being so—I will use the expression—being so short-sighted as to believe that the degree of M.D. meant a full culture. Now I do not think there is any man who has a thorough knowledge of what the course of instruction in medicine really is who would state that the man who bears the degree of M.D. is qualified to take up and intelligently practise all of the departments of medicine. Is it not true that the man who devotes himself to the treatment of the eye and the ear naturally feels that his knowledge of cutaneous diseases is not very sound? Would he, then, presume to treat cutaneous diseases on a par with a man who devotes himself specially to that branch of medicine? No, sir. He would do exactly as we do—and in this I agree with Dr. Patterson—he would put his patient in the hands of a man having under treatment from day to day those suffering from the kind of malady affecting his patient. For instance, if a man were suffering with a specific disease—syphilis, for instance—we might treat him, and treat him, perhaps, as well as could be; but we do not need to do that. Nor do we need to take up and attempt to practise gynecology; we would place our patients in the hands of some one devoting himself to the treatment of that class of disease.

The curriculum of our dental schools has broadened, and is yet broadening, and including other branches of learning. We are qualified to prescribe remedies. We must not be told that we have no right to administer anesthetics. Who is to say that the profession that brought to humanity that great boon, anesthesia, should not have the right to use it? Practically, if they were to do that, they would deprive us of our birthright. We have a right to use it; but we must know, if we use it, how to use it, and under what conditions to use it. We must know how to make a diagnosis of any malady that may confront us. The man who would make use of ether in his practice without a knowledge of, for instance, albuminuria, or any of the renal diseases, would be groping in the dark. A man who would do that might be punished according to law for not observing the precautions that are necessary in the interest of his patient. The man who would administer chloroform to one who has a weak heart, who has an intermitting pulse, or who has at times syncope coming on without any cause apparently—any external cause—or a cause due to an

internal disease, would be doing wrong. Consequently, we open up here a new field ; we open up a branch we are called to add to the curriculum the chair of physical diagnosis ; and the time is now come when the department of physical diagnosis must be a part of the dental curriculum ; and I do not think the time will be long until we will see every dental college in the country giving careful instruction in the physical signs of disease.

These are thoughts, that came to me during the discussion last evening. The discussion was merely a medley of opinions, and while we look upon our work and think of it, and think of how little we are doing now compared with what we are yet to do—those who are to follow us are to do—and when we think of how we have gathered up as much as we have, we look back, and are very proud of our achievements ; and yet, when we sit down and reason the matter out carefully, we cannot help but feel that we are doing very little indeed compared with what is to be done.

I cannot agree with one of the speakers of last evening who stated that we should not administer remedies. What is there that is used in medicine that calls for better judgment than the use of anesthetics? When a patient goes into a collapse during an anesthetic, the dentist thinks, "Why, I have no right to administer remedies ; what am I to do?" If he cannot administer remedies he must lose his patients, probably. He *must* use remedies ; he *must* know how to use them, and to use them with the highest degree of intelligence and according to the best methods.

Read, if you please, a paper of Dr. Michael's, of Paris, on the examination of the saliva. He has accomplished so much from a dental standpoint, and has shown to the satisfaction of those who have been close to him, that by careful examination of the saliva we are able to make a diagnosis of almost any form of disease known, particularly those affecting the general system. The examinations that he has made have convinced those who are familiar with them that the methods that he employs are far superior to those examinations of the urine, as has been done heretofore. And by these examinations he is able to detect maladies of the different tissues of the body that is most marvellous. Then the other papers invite your attention. These papers are coming out now in the *Dental Cosmos*, and those of you who have not yet read them will be surprised to see the work that was done in that congress. I hardly know how many years it will take through the *Cosmos* to give them all. But it was a great meeting, and when we have the next one we will have one still greater, I have no doubt.—*Dental Review*.

THE DISCIPLE.

A disciple is a man who does not understand. He thinks that he is on, but he isn't. And the reason of his obtuseness lies in the fact that he is willing to be a disciple, and hasn't the phosphorous to be an independent ego, as every man should. The true token of the disciple is that he is quite willing to let the other man do all the thinking. He is one who accepts the opinions of another without digesting them. He has such faith in his master that he accepts every word, and does not stop to analyse, sift, weigh or decide.

A disciple is an individual who is hotly intent on hitching his ice-waggon to a star.

That Man who had twelve disciples had twelve too many; no wonder that He used to send them away; no wonder is it that He went alone up into the mountain. The disciples were becoming a nuisance with their childish questions and quibbles and petty jealousies about preferences. He saw that they were going to make Him trouble. None of them rendered Him any service of which we know. A disciple is a traducer in the germ. One of the twelve betrayed the Man, another denied Him, a third doubted Him, and what the others did nobody knows. Personal relationship is sure to transform a disciple into an enemy. Your enemy is a man who does not comprehend you, and your disciple is the same; they mark different stages of the chrysalis, that's all.

If men could only know each other, they would never either idolize or hate. Anyone who idolizes you is going to hate you when he discovers that you are fallible. He never forgives. He has deceived himself and he blames you for it.

"I hate him!" said Dr. Johnson of a certain man.

"Why, how can you say that when you do not even know him?" asked Goldsmith.

"Sir," answered Ursa Major, "that's the trouble. If I only knew him I would doubtless respect him."

To know all is to forgive all.

Your friend and comrade! Well, that is something different. Your friend knows your limitations, respects your foibles, realizes your weak points. He sums up your character: he casts a balance and finds so much good to your credit; then he gives you his faith and loyalty.

But your disciple neither knows your best nor worst. He invests you with a halo and bestows on you virtues you do not possess. You never dare tell a disciple the truth—nothing but a miracle satisfies him. A disciple, in short, is an indifferent person who has been indiscreetly allowed to come close enough to strike a good man.

Your mental mate inspires you to nobler endeavor; he comprehends you at your best, appreciates your flights, detects your lapses, deprecates your aberrations, and his presence constantly tends to conserve sanity and a proper balance. On the other hand the disciple tempts in the direction of extravagance and hypocrisy. He is easily imposed upon, and as he demands the impossible, there is a strong temptation to give it to him.

All good men and women crave comradeship; but to have anyone accept your word as holy writ is a dire calamity. We want love and sympathy, and we want the right of being forgiven. We do not want to be idolized, we want to be pardoned. Flee the disciple on your life! Limit him to correspondence and communication by telephone. If forced to it, do as the Sibyl of Concord does—show yourself for two minutes, once a year, in the gloaming, from a high balcony, while the Non-Cogibund stand on the lawn, ten thousand strong, and tramp down the grass.—*The Philistine*.

NITROUS OXIDE ANESTHESIA IN GENERAL SURGERY.

Miller (*Providence Medical Journal*, April, 1901), says that for the administration of nitrous oxide and ether by the open method, the uncomplicated apparatus consists of an open ether cone and a tank of nitrous oxide, a seven-gallon bag, and an inhaler. The inhaler is so arranged with valves that the patient breaths gas or air at the will of the anesthetist. In operation the valve of the tank is opened and the bag fills with gas. The open cone placed top downward and the other requisites for ether anesthesia are at the anesthetist's right hand. The inhaler is applied to the patient's face, care being taken that it fits closely. The patient is instructed to breath deeply. After a few free breaths of air the valve is depressed and anesthesia begins. The breathing becomes more rapid, the pulse-rate is increased. In from one to two minutes the nitrous oxide anesthesia is complete, about seven gallons of gas having been consumed. Complete gas anesthesia is indicated by slight cyanosis, superficial respiration, muscular relaxation, and loss of the conjunctival reflex.

While the gas is being administered the anesthetist pours into the ether cone an ounce or two of ether, and as soon as gas anesthesia is complete the inhaler is removed and rapidly replaced by the cone. Ether anesthesia then progresses and is complete in from two to five minutes from the beginning of the gas inhalation.

It is necessary to keep the cone tightly applied during the early part of the operation, as the patient absorbs so little ether that return to consciousness is rapid if etherization is discontinued.

This peculiarity of the method is made use of in several ways. For operations of five to ten minutes' duration, it is possible to keep the patient anesthetized for only fifteen or twenty minutes, recovery being rapid and complete, without nausea and vomiting.

In December, 1899, the records of 160 cases of gas-ether anesthesia were collected at the Rhode Island Hospital. The average time required to anesthetize was 3.05 minutes, the shortest period being fifty seconds. Eighty-four per cent. of these cases suffered from no nausea or vomiting, and only 5 per cent. were considerably nauseated.

During October, November, and December, 1900, a careful record of all anesthesia was kept. The results are as follows:

Twenty-seven cases of simple ether anesthesia required an average time of 8.2 minutes to anesthetize. The amount of ether used per hour of anesthesia was 10.9 ounces.

Forty-four per cent. were not nauseated; 30 per cent. suffered greatly from nausea and vomiting.

One hundred and twenty-eight cases of gas-ether anesthesia by the open method required an average time of four minutes to anesthetize. The average amount of ether per hour of anesthesia was 9.7 ounces.

Sixty-three per cent. were not nauseated, and only 9 per cent. suffered considerably from nausea and vomiting.

While undergoing gas-ether anesthesia one patient complained of numbness, one of pain in the chest, and one of a choking sensation. The other 125 had no unpleasant sensations of any sort.—*Therapeutic Gazette*.

THE USE OF THE TUNING-FORK AS A TEST FOR DISEASE OF THE MAXILLARY ANTRUM.

Kuyk (*Laryngoscope*, February, 1901) asserts that except by surgical means there is no method of examination of the maxillary antrum which is quite positive or satisfactory, and that even the surgical method of exploratory puncture through the nasal wall will at times fail.

Take, for instance, a case in which the nostrils are occluded by hyperplastic turbinates, with a badly deflected septum, with a malposition of the ostium maxillare preventing, even after the nostrils are rendered patent, direct entrance into the antrum, and yet there are many subjective and objective symptoms of antral disease, perhaps empyema, perhaps a growth of some kind. There is a purulent collection in the nostrils which might come from the frontal sphenoidal sinus of the ethmoid cells. Pain is produced by

percussion over the antrum, but the patient is hysterical from attacks of pain, also through fear that something terrible will be done. Transillumination gives a shadow on either side. The patient fears an exploratory puncture, in fact declines it.

Here are present the cardinal symptoms of antral disease with a history guiding us direct to that cavity; but how often are histories misleading? The responses to tests are by no means infallible.

A test that is simple, painless, which will remove at least some of the uncertainties existing in these cases, which will give a fair amount of positive evidence, and which will permit a diagnosis to be more easily made, is by using a tuning-fork over the antrum and the teeth, the first and second molars being preferred.

If the antra are free and clear the tuning-fork will be heard with equal distinctness and for a like duration over each side and in either location.

It may not be well to explain to the patient just what is expected of this or any other test.

If one antrum contains fluid the fork will not be heard so distinctly, perhaps very faintly, perhaps not at all, but if the opposite antrum is free the patient replies quickly and positively in the affirmative.

Healthy cases have been thus tested with but slight variation in the result of the findings, but the experience of one person, remarks Kuyk, is barely sufficient upon which to base positive assertions.

This test was used with much satisfaction in a case of frontal sinus disease. It might also be employed in examining for ethmoid disease. It is certain that in disease of the mastoid bone, conduction is much diminished if not altogether destroyed.—*Therapeutic Gazette.*

ARTIFICIAL RESPIRATION AND OTHER MEANS OF RESUSCITATION.

Satterthwaite (*Post-Graduate*, May, 1901) says that usually in persons recovered from drowning or from poisoning by illuminating gas the respiratory function, rather than the heart, is at fault, and apnea is present and requires attention. Artificial respiration is also of material value in sunstroke, but if the heart will not beat the attempt is useless. Breathing may sometimes be very slow, for example, four respirations per minute were noted in a case of opium poisoning. A case is cited of a man who had poisoned himself with opium; one physician had pronounced him dead, and another had confirmed this view, yet five hours afterwards

artificial respiration was done, and the man resuscitated. Accessory means to resuscitation were faradism of the phrenic nerve, flagellation, and strong coffee. The poles conveying the electric current should be applied to the right side of the neck above the clavicle and of the intercostal space on the right side, so as to avoid the vagus and the heart. The application of the current should only be made during expiration. Transfusion of blood had less efficacy than artificial respiration, but saline injections were useful, especially in narcosis from anesthetics. The most heroic method of resuscitation of the heart was that of Maaq, who in a case of chloroform narcosis, after trying the various methods in vogue without effect, and finding the pulse gone, boldly opened the pericardium, and grasping the heart in his hand compressed it rhythmically. After a while it began to beat naturally, and then artificial respiration was resorted to. The patient rallied and lived for twelve hours after this, dying then of shock from injury to the pleura. Where mucus or other obstruction is in the throat, this should be cleared out before artificial respiration is attempted. In the case of persons accidentally falling into the water during syncope (for example, epilepsy, apoplexy, sunstroke), life may be prolonged for several hours if little or no water has been taken into the lungs. The face is pale, and little or no froth appears in the mouth in such cases. In practising any of the known methods (Sylvester's, Marshall Hall's, or Howard's), it would be well to have the patient's mouth opened and the tongue well drawn out during the procedure. Laborde's method of rhythmical tractions on the tongue at the rate of about fifteen or twenty per minute is useful, especially in the case of newborn children who have not breathed. The tongue is seized with the aid of a handkerchief or piece of lint. Respiration is in this case excited by the stimulation of the laryngeal nerves. The after-treatment includes warmth (blankets and hot-water bottles), hot coffee, and hot broth with or without a little brandy. Perseverance for about two hours is necessary in most cases, and in cases of opium poisoning even longer trial has been needed before the patient was known to recover.—*Brit. Med. Jour.*

DANGER IN CANNED GOODS.—The Inland Revenue Department's inquiry concerning diseases from the use of canned goods in Canada reveals the fact that within recent years there have been two hundred and fifty-four cases of ptomaine poisoning in Canada. Only fifteen of the cases reported terminated fatally. The department recommends the inspection of foreign canned goods, the use of glass and earthenware receptacles, dating of the cans, that the goods be kept in cold storage, and that their exposure on shelves and in windows be prohibited.

Correspondence

ONTARIO DENTAL SOCIETY.

To the Editor of DOMINION DENTAL JOURNAL:

DEAR SIR,—If you will give me a little space and spare a little of your valuable time, I will be very pleased to call the attention of members of the dental profession in Ontario to the fact that we are in an unfortunate state of existence, without harmony, without unity, without organization, without strength and without any means of provincial progress.

Stranded in this huge and wealthy Province, we are, indeed, a most dignified, well educated and honorable body of professional gentlemen, too proud to move this way or that, too dignified to be energetic, too much taken up with private affairs to take an interest in public questions, when it only needs a concerted action to take the country captive and to develop a position unequalled by any professional brethren in any country under the sun.

A few years ago we were capable of some such action through the influence of the Ontario Dental Society—of which society your journal was, and claims still to be, the official organ—but what has become of the officials? No one seems to know! The Society has gone off like the mist of the morning. It is as a sweet rose that blossomed and bloomed, but withered early with the cold penetrating dampness, and there is nothing but the faint memory of its fragrance to cheer the place where it once grew.

But without our Society how are we to command the dignity and respect which we feel to be our due? Are the people of Ontario to look upon the dental profession as a conglomeration of school-boys at an annual elevation? Is the dental profession of the United States, Great Britain and the whole of Europe to look upon the map of Canada, and point with a finger of scorn, that such a great country must have dirty teeth, for they have no dentists? Yet I fear this is inevitable unless there is a change soon, for up to the present we have had no representative, and consequently gained no recognition at any International Dental Congress.

Our numbers are increasing annually; the world is progressing rapidly, but our Province is disunited and there is no national unity; nor is such possible while the Province is in this condition. Are we to await a national crisis before we awake to the fact that we are not progressing provincially? Are we to await an invitation to join these international meetings; or are we to put ourselves in such a fortified position that a request by us for representation will not only be granted, but hailed with a

hearty welcome from them? It seems to me the latter will be the better attitude, and such an attitude requires that Ontario shall be united. As Lincoln said before the war, "The Union must be preserved."

Let me suggest that Ontario should be united by having a thorough organization of its electoral districts, with monthly meetings and a grand annual convention. Such organization means strength and progress and an influence on educational matters never before known in this country. It means a united front to fight the battles which shall place our college in the very topmost notch not only in Canada, not only on this continent, but in the whole world. We have the matter in our own hands, and it is our own lack of enterprise that it is not undertaken. It is now time to act, to make a grand coup for progress.

But who is to undertake this work? It seems clearly not the work of the Board, and I think it only courteous to the scattered fragments of the Executive of the apparently defunct Ontario Society to give them the opportunity to declare themselves and undertake this great work of union. The representatives of the electoral districts could organize the local societies without interference with existing ones, and the whole system unite in convention in February.

But who are these representatives of the Ontario Dental Society? and is there to be a convention in February? To learn these things is the reason for writing this letter.

For the benefit of those who do not know, I may state that the minute-book of the Ontario Society is reported lost, and no one knows the complete list of officers, so that it becomes necessary for each member to hold up his hand and make himself known. I am sure that your journal will be pleased to publish a complete list in next month's issue, so that we may learn who they are, and give all possible assistance to the Programme Committee for the most enthusiastic convention ever held in the Province. Speaking unofficially, but not without knowledge of the matter, I may say that one society has already secured sufficient material of a very high order, to ensure success, and I know for a fact that this same society has the interest of the profession too much at heart to vaunt itself in pomp and vain glory, preferring rather that the February convention be provincial; so that all of this material is at the hands of the Executive of the Ontario Society if they take timely action.

If the Ontario Society does not act immediately, the Eastern Society and the Toronto Society and the newly-formed and progressive Western Society should join hands and work together. There should be a united meeting in Ontario before the formation of the Dominion Council, which, from the look of things at present, will meet in Montreal next August.

Before concluding, let me apologize to my good *confrères* for disturbing their dreams of contentment and trust in the future. We are all tired, I know, and personally I feel quite out of place and too aggressive in this matter, considering that it should come from the pen of an older member. But no one moves; and I am convinced that this is our bounden duty to ourselves and to the International Federation of Dentists; not only that, but I have heard so much talk—so much blatant froth, I may say—because one of our number knows more about dental education than all the Province put together (which is no cause to censure him), that I would like to point out a means whereby these same talkers could prove their metal by a little honest labor.

Just a word to the Board before closing, not in a spirit of antagonism or criticism, but as a suggestion to help on the progressive movement of this Province. Would it not be wise to gain the confidence of the electors by public meetings with them, by telling them personally and publicly of the work which you carry on, by even sometimes asking their advice? Do you get from your electors a definite policy, by which you are to stand or fall? What do you represent? Have the electors any policy to give you? If not, why not?

I am sure you will all agree with me that the time for organization is at hand, whether or not you consider the electoral district the basis and the Dominion Council the goal, while the union of Ontario is an absolutely necessary intermediate step if we desire to influence educational matters in a school which it is within the power of the profession to make the most complete, most scientific and most aggressive in the whole world, and that is no less than our *Alma Mater*, the Royal College of Dental Surgeons of Ontario.

Very sincerely and fraternally yours,

CHARLES E. PEARSON.

ROMANCE IN DENTISTRY.

To the Editor of DOMINION DENTAL JOURNAL:

Dear Sir.—There has been so much talk and discussion of late on the advertising dentist, that I was forced to relate to you my idea of advertising, which I think is quite as bad as newspaper advertising or hand bills. One has only to keep his ears and eyes open to hear and see many amusing and interesting things, and observe as though you observed not.

I was seated in a King Street car one evening shortly after the closing of the college term, the car stopped to let on a young

couple, and it was easy to see at a glance, thought I, that "it was a lover and his lass." "Moonlight nights always make me more or less idiotic, you know," she added, apologetically. The girl was extremely pretty; she had the sunniest hair, a sweet red mouth, and the sweetest eyes you ever saw. Her mouth particularly attracted me, with its pretty curves and dimpled corners, and I noticed that the young man seemed to be of a similar idea, for he gazed and gazed, and seemed unable to take his eyes away from the *riante* red lips, with dimples at the corners. I admired his taste, and felt quite sympathetic.

How they did laugh and talk, and how the young man gazed! He was really very pronounced, but there was only one passenger in the car (that was I), and apparently he was not looking, and it was spring with the youth and the maiden, and they had just come in from the young spring night! Well, we arrived at the junction, and the three of us dismounted to get a Belt line car. I stood in the shade of a tree, still sympathetically watching my lovers, who were in the full blaze of the electric light. And this was the romantic conversation I heard—it is verbatim:

He—"I say, laugh again, won't you?"

She—"Why, the idea! why should I laugh?"

He—"But do laugh. I have been trying to see something all evening, but the light was bad—do laugh again."

She—"But I shan't do anything of the sort!"

With that she laughed so prettily and musically that I again admired the youth's taste. The young man bent his head and peered at the girl's mouth with what appeared to be excessive proximity. I did not know what was going to happen for a moment; but presently he raised his head triumphantly, and what do you think he said? "There is a root there that ought to be crowned! why don't you have it crowned? Suppose you come to me and I will crown it for you and you need a little bridge-work, too—" but I shut my ears and collapsed where I stood. It was "no lover and his lass" as I had imagined, but a new dentist in search of a patient. Romance, indeed!

Toronto, September, 1901.

E. H. HENDERSON.

The man with the gun

Dominion Dental Journal

EDITOR:

A. E. WEBSTER, M.D., D.D.S., L.D.S. - - - TORONTO, CAN.

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Vol. XIII.

TORONTO, OCTOBER, 1901.

No. 10.

DENTAL STUDENTS AND PRECEPTORS.

Just at this season of the year a great number of students are beginning the study of dentistry. It is a fact that dentistry gets its recruits from almost every walk of life. In the past many students came from the trades, mercantile pursuits and the teaching profession. As the standard of preliminary education was raised fewer and fewer came from the trades and business callings, and more and more from the educational callings, until to-day the bulk of the young men who study dentistry come direct from the educational halls of the country. As the teaching profession in recent years has become more of a life calling, the dental profession does not get as many recruits from that source as formerly.

This change of recruiting field for the profession marks a forward step. Nowadays young men enter the profession whose instincts and training have been along professional lines, and they are young enough to acquire the necessary manual dexterity to be a dentist. After a careful observation for some years I am convinced that the man who has been in business pursuits for any

length of time is the very last man who should enter the dental profession. He has no conception of professional etiquette, his training has been the very opposite to such a thing, and he is past the age at which he can give the necessary attention to the minute detail which is so essential to the dentist. When such a man enters the profession he is usually incompetent and even if he intends to avoid what some of his instructors have told him is *infra dig*, he soon finds that he does not succeed, and directly his practice is conducted on the principles of his former business. Incompetency from this kind of man is much more detrimental to the good name of dentistry than from a man whose former occupation has been school teaching. The old school teacher is ethical even if incompetent, his training has made him so, but his age and training are both against his ever attaining the highest manual skill. The man from the mechanical trades is usually competent, but unless he is made of the proper kind of clay he does not enter into the broader and more showy field perhaps of the profession. It is from such men, however, that we very often get designs of our most useful appliances.

To sum up, the profession is usually better without the recruit from the jack of all businesses who has been living upon his wits because he will be a failure in almost every respect as a dentist. The school teacher is all right if he can acquire the necessary digital skill, but in any case he must not be too old. The man from the mechanical trades is all right if he can obtain the present preliminary education in Canada. The dental student, *par excellence*, is the young man less than twenty years of age, direct from college, who has a mechanical turn of mind or has spent some time in a manual training school. It is a great source of satisfaction that over 75 per cent. of the students in the Royal College of Dental Surgeons of Ontario are from the latter source, and it will not be many years until fully 95 per cent. will be so trained.

The responsibility for accepting recruits to the profession in Canada rests with the individual dentist. Where a term of pupilage is demanded the prospective student must find a preceptor as a first step after obtaining a matriculation certificate. Dentists do not have an opportunity of coming to general conclusions from the study of so few students as may have passed under their observation. Such opportunities are presented to the teachers in colleges where no selective power can be exercised under our present regulations. However, enough has been said to call the attention of the dentist to the most desirable kind of student as well as the most undesirable kind. It must be understood, of course, that the above conclusions are general, there must be, of necessity, exceptions which should demand a preceptor's careful attention. Surely after a few weeks' probation about an office, together with the family and personal history and characteristics of

the young man, a very fair judgment ought to be formed of whether he will ever make a dentist or not. Frequently preceptors have said, "I knew from the first day that young man came into my office, that he would never make a dentist." Then why not have told him at once and not have the student waste his time and his parents' money, as has so frequently been done! Every one will admit that there is no lack of very excellent young men entering the profession, and if a dentist must have a student let him get one of such. The present dentists of Canada are responsible for the character, attainments, education and progress of the profession of the future of this country. Let us not be found recreant to our duty. No one can enter that we wish to keep out.

This subject will be further discussed in the next issue.

DEFECTS IN THE BRITISH DENTAL LAW.

Mr. Woods, of Liverpool, England, in discussing the dental education and examinations in Great Britain, among other things said: "Really, the trouble we suffer from is the fact that the examinations are not conducted by *dentists* themselves as a profession. We have no voice to say how the examinations can be improved and we know that for the L.D.S. (Eng.) three dentists are all that have to do with it. If we had a college of dentists now, run by dentists, we might be in a better position and I am not sure that we may not come back to that after all." The dental profession of Canada can assure Mr. Woods from personal experience that he has the correct idea of running the dental profession. A Canadian dentist cannot see the necessity of calling upon medical men to run dental affairs. If Mr. Woods or any one else interested in dental law and education will take the pains to look up the April and May numbers of the Journal of the British Dental Association, they will see a detailed account of the dental law as it exists in Ontario, Canada. The dental profession in Ontario makes its own laws and runs its own business.

OPENING OF COLLEGE.

The Royal College of Dental Surgeons of Ontario began its regular session of 1901-02, Tuesday, October 1st, at 5 p.m. The opening lecture was delivered by Dr. J. B. Willmott, Dean. The members of the faculty were present, dressed in their university

robes. The attendance at the College this year is very large, necessitating the dividing of the classes into sections in order to get them into the laboratories. As time goes on students are attracted from greater and greater distances, this year a Mr. Jakes, of Australia, is in attendance and hopes to receive his degree from Trinity University next spring. Not all of the provinces of the Dominion are represented in the student body but as years go by they will be. There are forty-five seniors, sixty-eight juniors and seventy freshmen.

Editorial Notes

DR. G. C. BONEYCASTLE was married September 25th.

DR. W. V. B. AMES, of Chicago, visited Toronto in September.

DR. C. N. JOHNSON, of Chicago is summering at Blackwater, Ontario.

DR. J. W. BARKER, of Uxbridge, was married Thursday, September 18th.

FIRE destroyed the office of Dr. J. A. Murray, of Port Perry, September 19th.

DR. OLDFIELD, Dean of a Dental School in Melbourne, Australia, was a visitor in Toronto in August.

DR. JAMES PALMER (R.C.D.S., 1901) has opened an office, corner of Jarvis and Queen Streets, Toronto.

DR. D. M. MITCHELL, of Port Arthur, Ont. (R.C.D.S., 1899) was married in Blenheim, Ont., August 28th.

DR. W. A. B. McDONALD (R.C.D.S., 1898) died at his residence, Elora, September 13th, after an illness of about a month.

DR. G. E. HANNA, President of the Board of R.C.D.S. is very ill and Dr. Clark, of Woodstock, is now acting in this stead.

HAS the Executive Committee of the Ontario Dental Society set the date of the next meeting yet? Is the programme being prepared?

MR. W. P. FINLAN who completed his second year in the R.C.D.S. last year is attending the University of Michigan, Ann Arbor, Michigan.

A MEETING of Sixth, Seventh and Eighth District Dental Societies of the State of New York will be held in Rochester, October 29th, 30th and 31st, 1901.

ONE of the notable figures at the pageant at the reception to the Duke of York in Toronto was Dr. H. R. Abbott, who has lately been gazetted major in the Hussars of London.

DR. ALEXANDER MARTIN, of Ottawa, was instructed to meet the *Ophir* at Rimouski, on the 13th of September, to perform a dental operation for Her Royal Highness the Duchess of Cornwall and York.

PROFESSOR KOCH, at the recent British Congress on tuberculosis, said that the sputum of consumptive people must be regarded as the main source of the infection of tuberculosis. He also said that tuberculosis of cattle is not transmittible to the human family.

THE Board of Quebec Dental Association holds monthly meetings to transact business involving about \$5,000.00 a year, while the Ontario Board meets once a year to transact a business involving \$20,000.00. More frequent meetings of the Ontario Board is desirable.

RECEIVED, a report of the Congress on Tuberculosis, held in Berlin, Germany, May, 1899, by Edward Farrell, M.D., of Halifax, N.S., who was the Canadian delegate to the congress. No one has any authority to appoint delegates to such international congresses in the dental profession because there is no national organization in Canada.

IN a suit for damages against a dentist in Melbourne, Australia, for extracting eleven teeth under an anesthetic which the patient did not agree to have done, the patient, an aged servant, placed the value of each tooth extracted, although some of them were defective, at \$45.00. The court, in view of some doubt as to whether consent was given, valued each tooth at \$10.00. Consequently, the dentist had to pay \$110.00 and the costs of the court.

IN this issue appears a by-law of the Dental Association of the Province of Quebec in reference to breaches of discipline. Under the by-law there can be no "dental parlors" of any kind, no newspaper advertising or large signs. This is really a blessing to the profession in a financial way, because it saves the large sums spent in advertising. If for no other reason dentists might well agree to such a law. In Ontario the disciplinary powers granted to the profession by the Legislature have never been exercised by the Board.

DR. BRYAN, of Switzerland, is very anxious for fear someone else may get credit for introducing immediate regulation of teeth. Dr. Cunningham, of England, seems to have stolen some of his thunder, while neither of them acknowledge Dr. James, of Chicago, in the matter, who wrote a paper on the use of the circular saw cutting through gum tissue and alveolus on mesial and distal sides of the inlocked tooth, and by this means making the operation of forcing the tooth into position less hazardous. Dr. Cunningham claims credit for what was published in the *Dental Review* by Dr. James.

ONE of the most interesting and distinctive features of the college building of the dental department of the University of Tennessee, Nashville, is a most complete array of large pictures of the leaders of the dental profession in America. It is a pleasure to know that there are a few Canadians numbered among the leaders of the profession. The idea is a good one; it stimulates the students to read the writings of men whose pictures they are familiar with—they feel acquainted—besides, it is a tribute to those who have given their best efforts to the profession. Could the Royal College not make a collection of the pictures of the pioneers of the profession of Canada at least?

FOR SALE

Cheap—Davis Gasometer, just new; reason, partnership. Address, Box 60, DOMINION DENTAL JOURNAL.

Dominion Dental Journal

VOL. XIII.

TORONTO, NOVEMBER, 1901.

No. 11.

Original Communications

LECTURES ON CROWN AND BRIDGE-WORK.

BY F. J. CAPON, D.D.S., L.D.S., M.D.S., TORONTO.

(Continued from October issue.)

Another common form of abutment for fixed bridge is the open-faced cap. It seems to be more particularly adapted to the cuspid, if it has a place at all, but have seen them on centrals, and laterals for many years without a sign of distress. It is quite evident that a closely-fitting one, properly cemented, will have a better chance, and as there are times and places where one is compelled to use them, it is well that we give them a brief consideration.

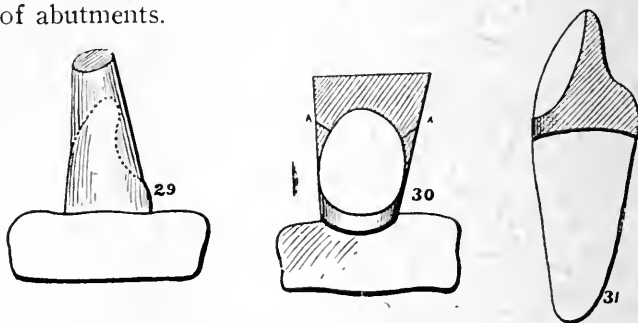
The reducing of a crown for one of the open-face shells is just as important as for any other, and must receive due and prompt attention. The older way, and possibly the more common way of procedure, is to make a band to perfectly fit the cuspid at the gum margin, extending slightly below it. The lingual aspect of band will be projecting (Fig. 26). A piece of pure gold is burnished on the lingual surface of tooth and trimmed to appear as Fig. 27. This is replaced on lingual side of tooth, on inside of band, and held firmly in position by hard wax. The whole is removed, invested, soldered, trimmed, and polished, as Fig. 28.

The best result in open-face shell cap is got by similar process as for *fac-simile* cap. After trimming and getting measurement, a plaster impression is taken, and a fusible metal cast is made;

proceed in exactly the same manner as for *fac-simile*, making the cone (Fig. 19), forcing it over the metal cast, keeping the cone at such an angle that it will lie closely to lingual side of cuspid (Fig. 29). With the shears cut out roughly the labial surface of the tube, leaving a band at the neck, which can be trimmed to the desired width in finishing (Fig. 30). With a burnisher, and the peinal side of a small bench-hammer, the lingual



surface is worked down accurately to its proper and close relation to cast. To affect the contour it is sometimes necessary to cut with a ribbon-saw at *a* (Fig. 30). By carefully trimming and burnishing, the apron can be brought over the incisive edge if necessary. The shell is lifted and soldered at any desired point, then filed, burnished, and finished (Fig. 31). This style will give a close adaptation which is a most essential point with this class of abutments.



The cuspid is more frequently called upon as an abutment for a bridge than any other tooth in the arch. In the great majority of cases esthetic appearances play a prominent part. The open-face certainly has its objections, and before crowning a tooth that stands intact, one should hesitate before pulling down such a powerful adjunct to a mouth already in depletion. I think you will agree with me that a cuspid is the most difficult of all teeth to adjust a collar or band and keep the esthetic appearance, being the corner of the arch, so to speak; the gum tissue is often thin

and liable to recede on slightest provocation, thereby leaving a tooth that is labelled false. The spur attachment can be utilized to good advantage in such cases, giving strength, durability and appearance. If the cuspid be pulpless, so much the better, if intact, and all other means being considered, one need not hesitate to extirpate the pulp, and if immediate, little or no discoloration follows. The iridio-platinum dowel or spur is tapered to be well seated into the prepared canal, and a slot made to receive the spur, which is bent at an angle to connect with bridge. These attachments are first set in cement or gutta-percha, amalgam worked under the bar, and finished with a gold filling.

This form of attachment has been highly satisfactory, overcoming difficulties in regard to angles of abutments that otherwise would have meant mutilation and disfiguration.

Post and Collar Crowns (Richmond).—When it has been determined that the root of a cuspid, first or second bicuspid is called upon to form an abutment for a bridge, there is naturally more stress to be borne by it, and as gold is out of the question, owing to the conspicuous position, a banded crown of porcelain and gold (Richmond) will meet the requirements.

If the case be a cuspid, strict attention should be paid to the mechanical preparation, as shown by Figs. 7, 8, and 9. A point might be made in leaving the root sufficiently above the gum margin to enable easy access in the fitting of the band, after which it can be cut off to or below the margin on the labial side, but on the palatal aspect the trimming need not be so deep. The curve at the cervix should be same as that of the adjoining tooth, as shown by Fig. 4, so that in the completed crown the cervical outlines are alike. As the band is a protection to fracture of the root, it is then quite capable of doing its duty at half the width of bands usually seen. Therefore, a band of the neatest character is made to fit the root accurately. The line of face of root is scratched with fine excavator on inside of band; it is then removed, and the surplus cut away and trimmed to the line. The collar is pickled, and its upper surface is laid upon a flat piece of 24-karat gold plate (gauge 31, B. & S.), the flux being placed at the contact points, a minute particle of solder (22-karat) placed at the junction; the plate is held over a Bunsen flame until the solder flows and fixes the band at one point. The plate is then bent down to fit the entire edge outline of the band, and soldered as before. The cap is then trimmed, placed in position upon the root, a small hole is punched over the already-prepared canal, and a tapering piece of square iridio-platinum wire is forced through the cap and home in the root. It is often found the dowel and

cap can be withdrawn in proper relation and soldered with 20-karat solder. Replace the cap in position, and take the wax-bite and impression in plaster, allowing it to get hard. Bring, if possible, the cap and post with it. The cast is made, the porcelain face ground in proper relation, backed with 24-karat (No. 31), and soldered and finished as shown in Fig. 32, *a, b, c, d*. If a bicuspid is the required abutment, proceed on the same lines until *b*, Fig. 32 is reached, when a biting surface is stamped out and placed in proper relation for occlusion, etc., filling it with wax between biting surface and band until proper contour is got (Fig. 33). Then place a piece of pure gold on each side, as shown by dotted lines. In investing, the palatine surface is left exposed, the wax boiled out, and replaced with solder, 18-karat. This makes a powerful and artistic crown, and is used where great strength is required.

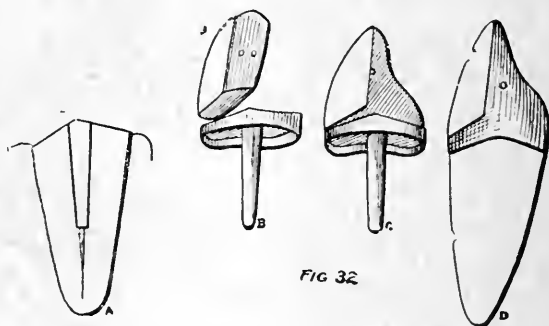


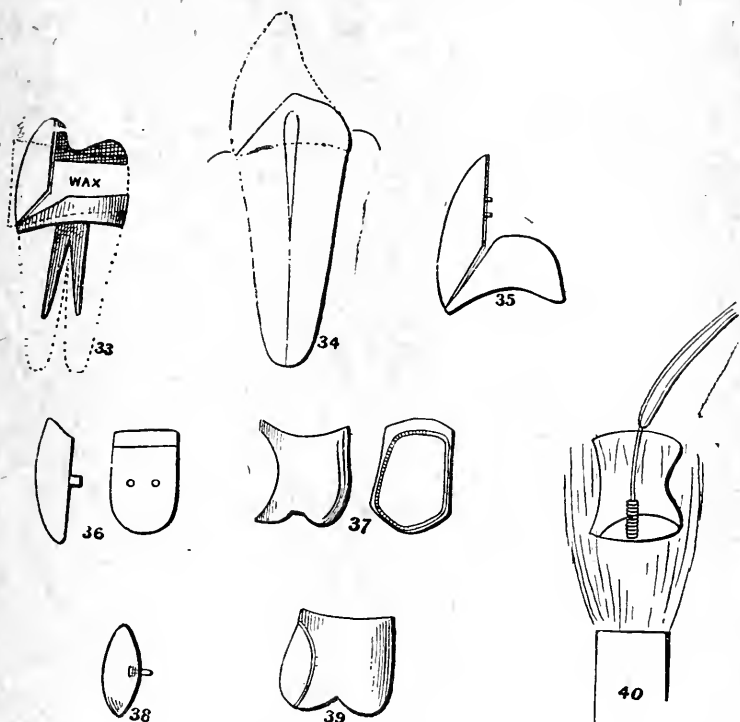
FIG 32

Porcelain-faced Crowns for Teeth Containing Vital Pulp.—

This heading does not allude to porcelain work, as that will be taken up under a heading of its own. When collar-supports are to have porcelain faces, those cases where crowns are to be placed over teeth containing vital pulps, the tooth to be crowned is trimmed so that a sufficient covering of dentine is left, to act as a protector to the pulp. At the labial or buccal aspect the tooth is sloped to the gum margin, and a little below, carefully avoiding uncovering the cornu of the pulp (Fig. 34). In a large percentage of cases where this style of cap or jacket is applicable, there has been extended caries with recession of the pulp. A band and cap is made to fit the stump end nicely, and a porcelain cross-pin facing is nicely ground in position, and backed with thin, pure gold, or better, No. 60 platinum and gold foil, which is made to cover and lie closely to the full porcelain surface on palatine aspect (Fig. 35); it is now

invested and soldered, having sufficient heat to run the solder to all portions of backing.

When a bicuspid contains a vital pulp, make a gold cap to fit the root or stump, having proper occlusion, not filling cusps with solder. Select a porcelain facing suitable for case (Fig. 36). Place the crown on the root in the mouth, and with an excavator mark on the face where the porcelain is to appear. Remove the crown and saw out, so that the facing will fit loosely. With a



knife bevel the inner edge or seat for the facing (Fig. 37). Grind the facing to fit (Fig. 38). Back up the facing with No. 34 or 35 pure gold, or No. 60 platinum and gold, annealing as required to readily conform to the tooth.

Place the facing in the space prepared for it in the crown (Fig. 39), and bind the two together (not too tightly) with wire, wrapping the wire directly over the facing with asbestos to prevent discoloration of porcelain. Flux and solder by holding over a burner as in the case of a band (Fig. 40), or invest and solder in usual way, if you prefer.

(To be continued.)

PRESIDENT'S ADDRESS.

BY A. E. WEBSTER, L.D.S., D.D.S., M.D.

Read before the Toronto Dental Society, October 8th, 1901.

The valedictory address of a president should cover the doings of the body over which he has presided during his term of office, as well as suggestions for the future. An address before this society would be considered very narrow indeed if it did not make some reference to the profession in Ontario and the Dominion of Canada, and, in fact, the whole world. With such a broad field laid down it is quite clear that reference cannot be made to all the important happenings in the profession during the year. Only those occurrences which appeal to the writer as being milestones in progress which are of particular interest to us will be discussed. Whatever inferences or suggestions are made are not done in a spirit of criticism, but rather that the subjects may be open for discussion and that good may come.

During the year just passed this society held eight regular meetings and one special meeting. The average attendance at the regular meetings was thirty. The special meeting held in July under the direction of the Board was not as well attended by our members as it should have been. The character of the subjects presented deserved a better attendance. A very large number of visitors were present, however, and made welcome both at this meeting and at the one held in February, when we had with us such distinguished guests as Dr. Truman W. Brophy and W. V. B. Ames, of Chicago, W. A. Price, of Cleveland, and S. Moyer, of Galt.

The character of the original communications presented and the clinics performed were on the whole above the average. But I must say that the discussions have not always been up to what they might have been. Those taking part were not always to blame for this; most frequently the essayist was to blame because he did not allow any one to see his article previous to its presentation. In future essayists should be requested to have their articles in the hands of those who are expected to take part in the discussion at least one week previous to the meeting at which they are to be read. This will insure for the essayist a good discussion of his efforts. Nothing is more disheartening to an essayist than to have little or no discussion of a paper that has cost hours of thought to prepare. A paper that has not been so prepared the author should be ashamed to present, not alone for his own sake, but for the good name of the society and the whole profession.

The Executive Committee, with the idea of improving the papers presented and the discussions upon them, thought it wise to have all papers and discussions published. A stenographic report was made of several of the meetings. The report was not always satisfactory. The reporter, not being acquainted with the technical expressions used, made it very difficult for her to follow the discussions. Then again, when the transcript was sent to the authors to be edited, it was often never returned for publication. I hope that the society will continue to have its meetings reported by a stenographer, and a full report published. It is one of the best ways of bringing the society before the profession, and, besides, papers and discussions before this society should be of such a character that every dentist in Canada should be anxious to read them.

The author of a paper should always remember that as soon as it is read before a society that the article is then the property of the society, and should be given into its possession at once. If this were always done it would save the secretary a very great deal of trouble. I would suggest that at all future clinics that the clinicians be requested to bring with them a written report of their clinic, with any drawings or diagrams that may be necessary for its better understanding. This report should be handed to the supervisor of clinics, who will then be in a position to make a report without running the risk of mistakes. It cannot be expected that a reporter could give as good a description of a clinic as the clinician himself. Your Executive Committee decided to remove all business details from the general meeting and thus save the time of the sessions for more important work. I trust that this will be continued.

There is a notice of motion before the society to change the plan of electing officers, which will save much time of the society. I would further suggest that the election of officers take place at the last regular meeting previous to the summer vacation. By this plan there would be plenty of time for the officers to think about the programme for the following winter. As it is now there is no one here who knows whether he is going to be an officer or not, and therefore has not given any thought to the subject. The medical societies of Toronto are now working on this plan, and find it much more satisfactory than their former method of holding the election in the autumn.

It is a great source of satisfaction to the older members of the society to see so many young men identify themselves with society work. Dr. Crouse, of Chicago, says he owes a great deal of his success in life to advice given him by his brother to attend the first Illinois State Dental Society Meeting. He

has not been absent since. At the annual dinner of our society, both Dr. Brophy and Dr. Ames noticed the youthfulness of those present. In fact, Dr. Ames asked me if there were any old men in the profession in Toronto. I replied, "We all have the appearance and enthusiasm of youth, if not the years."

Because there seems to be some misunderstanding about the conditions which led to the meeting held under the auspices of the Toronto Dental Society in February, 1901, I take this opportunity to relate the circumstances which led to the meeting, and the motives which actuated the Executive Committee.

The dentists of Toronto, being justly proud of the magnificent meetings of the Ontario Dental Society held in February each year, memorialized that society to hold its meeting at the usual time, and not have it cancelled as was suggested and later carried out by some of the officers of that society. We can see now that it was a deplorable fact that the Ontario Society did not hold its regular meeting, because the officers are elected annually, and as more than one year has elapsed since a meeting was held, there are no officers, and the society is defunct. The Executive Committee of the Toronto Dental Society, wishing for the greatest good to the greatest number, decided to hold a meeting in February, so as to perpetuate the idea in the minds of the profession of the Province that they must attend a dental society meeting, in Toronto, in February. The Toronto Dental Society did this solely to keep the way open for the Ontario Dental Society in the future. The society was criticized for asking the dentists outside of the City of Toronto to be their guests. We believe these criticisms were made only by those who did not know or appreciate the cosmopolitanism of the Toronto Dental Society. At any rate the meeting was an unqualified success. The attendance was good, and the complimentary remarks from our guests made us feel that we had done a good work. We did what no other dental meeting ever did in Canada. We interested the medical profession of Toronto in dentistry to the extent of having about twenty of the leading city surgeons present and take part in the proceedings. Our proceedings were published in the medical journals of Canada. Since that meeting the surgeons of Toronto are operating upon cleft palates after the methods suggested, and so admirably described, by Dr. Brophy. The Hospital for Sick Children was thrown open to the members and guests of the society to see dental operations performed by those on our programme. One of the direct results of the meeting was the inauguration of a dental department in the Children's Hospital with a complete outfit, and under the direction of the dental surgeon of the Hos-

pital. Surely efforts which brought about such results and recognition cannot be considered selfish. The Toronto Dental Society, through its individual members, has already gotten the promises of some of the leading dentists of America to assist in the programme at the next meeting of the Ontario Dental Society. Our plain duty as a society is to set about putting the Ontario Society upon a sound basis, and see to it that its next meeting is the best ever held. There should be two hundred members at the next meeting.

For a good many years the Ontario Dental Society has held its meetings in Toronto. Our members have not in all that time had to close their offices, leave home, and pay travelling expenses, as our friends from other parts of this Province have had to do, in order to attend its meetings. What have we done to entertain our friends who have come to us under such sacrifices? Nothing? Yes, we have done something; we have invited them to the Toronto Dental Society dinner, for which we charged them the full fee. It is about time the Toronto dentists do something more than this for their visitors. It is true that the Toronto Dental Society ran two general meetings in the past year without any expense to those outside of the city, but that is not enough.

Progress in membership and attendance have been made during the year. A number of our members have attended and become members of National and International Congresses. We have been honored by having at least five of our members on the programmes of various meetings abroad during the year. Two dental societies have been recently organized in Ontario, the Brantford Dental Society and the Western Ontario Dental Society. These new societies should get any support that we can give them. Three very successful district meetings were held in Ontario in July. Out of the London Section grew the Western Ontario Branch. As usual, the Eastern Ontario Dental Society comes forward with an important movement; this time it is the inauguration of an army dental corps; also the means of giving the public a better dental education, by Dr. McIlhinney, is very suggestive to the Board, and should be discussed at length in this society. It appears in the September number of the DOMINION DENTAL JOURNAL. The Dental Society of Western Canada has put its hand to the nationalization of the dental profession in Canada. An ordinance has been passed in the Yukon to regulate the practice of dentistry in that Territory. This ordinance is very objectionable from a Canadian and a professional standpoint. It gives political control of the profession in its entirety—in September DOMINION DENTAL

JOURNAL, 1901. The Board of the Royal College of Dental Surgeons has passed a by-law making it compulsory for a student to attend four sessions at college, and the balance of four years in a practitioner's office, before admission to examination for a license. The National Association of Dental Faculties followed suit, and now requires four college sessions of seven months each.

The building of the Royal College of Dental Surgeons is to be enlarged to suit the requirements of the new curriculum. The Quebec Dental Association is having difficulty in maintaining its college, and has suggested increasing the annual dues to five dollars. The movement towards a Dominion Dental Council is still going on. Trinity University is interesting herself in the matter. The Eastern Ontario Dental Association has started a movement to have appointed a Dental corps to the Canadian militia. They have done more than start the movement; they are keeping the subject warm. The Secretary has communicated with every Dental Society in Canada, and with every dental journal and medical journal in Canada, Great Britain, and the United States, with the result that an interest is being aroused.

This Society might make a mental note of the vigor with which that Society follows up its proposal. How very many commendable ideas have been discussed before this Society that have never again seen the light of day. We want more vigor behind our ideas. This Society must take action on the Dental Army Corps question. To simply pass a resolution is of little value in itself; what is needed is the Secretary to publish the fact in the press, and every member to talk about it in such places and at such times as it will have influence. Have the question brought up at meetings of the masses. The British army has a dental corps, and why shouldn't the militia of Canada have one?

At the August meeting of the National Dental Association, steps were taken to wipe out that disgrace to the good name of dentistry, the bogus diplomas issued in the United States.

A meeting of the Committee of the International Dental Educational Federation was held this year in Cambridge, England. One of our members had the honor to be appointed as Canadian delegate. A report will be made later to the Canadian profession.

It is clear that I cannot discuss all of the subjects suggested, but I hope those taking part in the discussion will at least take up the army corps question, Dominion Dental Council, recognition of our degree in Great Britain, the advisability of original research rooms in the new college buildings, dental education, etc.

I cannot close without calling attention to a question that affects us as dentists, as Canadians, and as British subjects. I

refer to dental education and legislation. Very large portions of Canada accept the dental qualifications of a foreign country. It is even said that a preference is given foreigners, or to those educated abroad. There surely must be some reason for these statements being made. High officials of the Canadian Government say that the majority of Canadians get their dental education abroad. Have we as a society done all in our power as an educative factor when our Government officials made such statements? I think not. Although we may resent what Commissioner Ross of the Yukon said, there is a grain of truth in it. By counting the number of Canadian students in attendance in the dental schools of the United States last year, it is quite clear that we do not educate many of the Canadians who study dentistry. All told, there were approximately two hundred students in attendance in the Canadian Dental Colleges last year, while there were about two hundred and sixty Canadians in American Dental Schools. The number of Canadians proceeding towards a degree in medicine in the United States for the same time was about one hundred and twenty. One reason for this disproportion is the higher medical matriculation standard in the United States than in dentistry. In Canada the matriculation standard in dentistry is the same as for medicine. Another reason is, the number of medical schools in Canada as compared with dental schools. I leave the matter with you as to whether these reasons are sufficient. Being a member of the teaching staff of the R. C. D. S., I may be at liberty to raise the only other reasons for this large number of Canadians leaving our country for a dental education. Is our dental education in Canada up to the standard? In some provinces there are no colleges, but this does not hinder their students from attending those schools that do exist in Canada if they only knew what kind of education was given. The Dental education in the R. C. D. S. is up to the standard of the very best dental schools in the world. This is no idle boast. I have visited and carefully investigated within the past two years over thirty of the best schools in the United States, and all of those in Great Britain and France. I have a personal and reading acquaintance with the facilities of all of those institutions: I have seen their equipment, and am therefore in a position to judge. Then the chief reasons for students leaving our country must be ignorance. Not an ignorance for which they are responsible, but we ourselves; yes, this very society. Our college will accept dental students for two years as occasionals who have not our matriculation, and will then transfer them to any college in the National Association of Dental Faculties, of which we are members. How many prospective stu-

dents know this? In fact, very few dentists outside of Toronto know it. How many head masters of high schools know it? The truth is, no attempt has been made to spread such information. Ignorance of the course given in the R. C. D. S., and the requirements to enter it, is the rule both in and out of the profession. Here is an example: One of our graduates of 1894 has practised in British Columbia, and came east this summer filled with indignation at the kind of course given in the R. C. D. S. In his mind it was a disgrace, etc., etc. Here was his trouble: The literature of other dental schools has been sent him for years. Articles on dental colleges have appeared from time to time. He read of great advances, and then thought of the course he got in the old school on Louisa Street, and had an idea that the R. C. D. S. was giving the same course now as it did then. His idea was quite natural. Before he left Toronto I took him over to the College, and went through the building, and pointed out the appliances, and gave an outline of the course. When going away he said, "I am proud to be a graduate of the R. C. D. S. to-day; for the past year or more I have been ashamed of it." It is the duty of the Board, it is the duty of the Faculty, it is the duty of this society and of the alumni, who have a knowledge of the progress of our *alma mater*, to spread it broadcast. It would be only proper if the Faculty of the College would write up the course given and have it published.

This man's condition is that of many others. Why, right here in this society there are men who do not know what the Board or College are doing. They are not to blame if they visit another college, and find out what is being done there, and then jump to the conclusion that their *alma mater* is behind the times because they compare the course they got three or four, or perhaps ten years ago with that now given in some other school. More knowledge of the doings of the Board and College should be sent out. This should be done in self-defence, if for no other reason. Every institution worthy of the name of a college should keep its graduates informed of its progress. It owes this to its graduates. The college should have a live interest in its graduates. Here is a sample of what other institutions do for their alumni, and compare it with what we do. I am a graduate of the medical department of the Chicago University. I receive an announcement every year. I receive a letter from the Secretary of the college when any changes in the curriculum are proposed. When these changes are made they are sent out, together with a letter calling attention to it. Full reasons for the changes are given, and a hope expressed that I may concur in what the

management has done. Any changes in the teaching staff are noted, and a full list of the literary and scientific work done by the Faculty during the year is sent out. This is done for the alumni of a university that is wealthy, and does not need either students or money. It is done merely to keep the alumni informed of the progress of their *alma mater*.

The profession of any country is judged by the educational standing of its colleges. Now, if the profession of Ontario does not know the kind of courses given in this college, how can they expect those in a foreign country to know? The fact is, if they ask about our institutions, an incorrect idea is given because of ignorance, and thus we may be branded as back numbers. It would do the profession of Canada more good than anything I know of if the faculty of the College would give, before societies and for publication, a complete and thorough outline of the course in the R. C. D. S. If this were kept up for some time, it would do more to place the College in the proper light before the profession than anything else could possibly do. It is a shame to have a college discredited by its alumni on account of ignorance.

Before sitting down I wish to thank those with whom I have been associated during the year for very many kindnesses and for their large bumps of forgiveness. In my official capacity I have done many things that might have been done differently to advantage. I trust that my successor may have as efficient, energetic, and painstaking a Secretary and Treasurer and Executive Committee as I have been associated with during my term of office.

INFLUENCE OF ELECTRIC OZONATION ON DISEASE.

BY G. LENOX CURTIS, NEW YORK.

Read before the Section in Medicine of the New York Academy of Medicine, New York City,
October 15th, 1907.

Dr. Curtis stated that polarity, if not the primary phase of atomic energy, was clearly related to the manifestations of that higher form of energy upon which organic forms depended for what was termed life. Physiologic life co-existed with this form of energy; we could not conceive of one without the other, and it was equally well understood that this force must be co-related with light, and that all depended upon solar influence. Dr. W. D. Robinson, who had made an investigation into the causes of disease in the Eastern Penitentiary at Philadelphia, said that the power of sunlight in reducing mortality was definitely shown.

Experiments by Finsen had demonstrated the value of solar and electric light in the treatment of lupus, while others had reported satisfactory results in the treatment of pulmonary tuberculosis.

The speaker believed that present efforts in the line of electric research would finally open up the way to the long-sought goal—that *ultima thulo* where life would not cease, except as a result of natural causes. The apparatus, with the assistance of which he had conducted his researches along these lines, consisted of a system of coils which multiplied the current taken directly from the street main. The capacity of the apparatus, he said, was one million volts, and it had one-sixth amperage. A single wire leading to a Geissler vacuum tube and to an ozone generator, consisting of a single loop of wire or of a brush made of many fine wires, was attached to the machine. From the points of the latter and through the tube the electric fluid formed a fine spray, producing ozone, colored light, and heat.

Nervous functional activity and tissue repair were stimulated in the human body with less shock to the patient when a high voltage and a low amperage were used. Owing to the low amperage for this machine, there was no shock or unpleasant sensation, as was common in the two-pole machines, the machine used by the speaker having but a single pole. The machine being portable could be used wherever there was an incandescent service. It could also be employed at the bedside for the purpose of supplying ozone, thus replacing the ordinary oxygen apparatus. The machine was connected with a cabinet containing a glass slab, upon which the patient could lie, and above and below the slab was a number of incandescent lamps for the generating of light and heat. While in the cabinet the patient inhaled the ozone, and at the same time grasped the electrode through which the current passed. After a few moments in the cabinet the patient perspired freely. The best results were obtained when the patient remained in the cabinet from twenty to thirty minutes. After a cabinet treatment, the patient was given a shower-bath, for the purpose of cleansing the skin, and was then massaged with the electrode over the region of the disease. This operation consumed from five to thirty minutes, and had for its object stimulation of the muscular and visceral circulation, and to favorably influence the nutrition of the parts.

The process was essentially an oxygenating of the blood and the destroying of pathogenic organisms in the body, and the eliminating of products of retrograde metabolism. The speaker said that the current from this apparatus changed the unstable equilibrium into which the vaso-motor system was thrown during an inflammatory morbid process. The re-establishment of

the normal circulation resulted in relieving the congested parts, and in a more plentiful supply of blood to other organs, where previously there had been a deficiency. The current was conducted to the patient through a vacuum glass electrode, which so modified it that no shock was produced, the only effect appreciable to the patient being an increased sense of warmth throughout the body. During the treatment, a great abundance of ozone was produced, and was inhaled by the patient.

The speaker had found that resolution in morbid processes was markedly hastened by this method of treatment, and that its beneficial effect on the blood was most convincing, as was shown by an increase in the number of red corpuscles with a corresponding increase in hemoglobin; and a diminution in number of the white corpuscles and destruction of pathogenic bacteria.

Daily treatments were usually given until satisfactory results were obtained, which results usually followed within a month. He had often noted beneficial results after one or two treatments in chronic conditions, such as gout and rheumatism, delayed resolution in pneumonia, neuralgia, etc. The maintenance of the circulation in its natural quantity and quality being a prime requisite for the preservation of health, the question confronting us was how to maintain this vaso-motor equilibrium.

As the sun's rays were all-important to life, and as the sun was an electric dynamo, it seemed reasonable to the speaker to conclude that electricity was in some way leagued with life itself, and that without it our bodies would be unable to make a normal show of resistance. The first duty of the physician was, he said, to re-establish the circulation in a diseased part. The circulatory system depended upon the perfection of the nervous system, and we must see that that was kept at its best. How that could be done most advantageously he purposed to demonstrate on the present occasion.

With the instruments presented, the highest voltage and the most delicate impression could be obtained, and by its aid the nervous system could be recharged and life revived. He had observed the effect of this treatment in about two hundred and fifty cases, and his experience had led him to believe that it would be equally effective in both acute and chronic diseases. It had proved most effective in tuberculosis, including lupus; in syphilis, in carcinoma, in locomotor ataxia, in paralysis agitans, in hysteria, in meningitis, in sclerosis, in neuritis, in torticollis, in gout, rheumatism, and diabetes mellitus.

The speaker related the histories of several cases of tuberculosis that he had treated by electric ozonation, there having been

decided improvement in all instances. In all of the cases medicinal treatment had been continued, and the closest attention had been paid to the hygienic condition and surroundings of the patient. He related also the histories of cases of meningitis, paralysis, locomotor ataxia, melancholia, diabetes, cancer, Bright's disease, lupus, etc., in all of which decided benefit had been experienced under electric ozonation. In several cases of well-defined tuberculous infiltration resolution had been complete and the normal lung capacity had been regained. In conclusion, Dr. Curtis presented the following summary concerning the apparatus:

1. The device is not complicated, and the cost of the apparatus and its maintenance is not prohibitive. A nurse can be taught to operate the machine very successfully.

2. The high frequency of the low amperage of the current eliminates all danger from shock.

3. The high frequency current and the great quantities of ozone liberated are productive of rapid therapeutic results.

4. The efficiency of the machine is not impaired by damp weather, and it is, therefore, always ready for use.

5. The machine is portable, and well adapted for use in the sick room.

6. It generates pure ozone, and for that reason it is superior to any oxygen apparatus.

7. Chronic and acute cases are alike amenable to the curative effect of electric ozonation.

8. This appliance is a valuable diagnostic aid.

Proceedings of Dental Societies

TORONTO DENTAL SOCIETY.

First annual meeting of the Toronto Dental Society, October, 1901. Retiring President's address (see page 418).

DISCUSSION.

Dr. J. Frank Adams believed that popular dental education is very much neglected. The people do not always appreciate the sacrifices dentists make for the common weal. There is an impression abroad that the Board is raising the standard so as to protect a monopoly, while as a matter of fact every time the standard is raised more and better students enter the profession. No worthy young man wishes to enter a profession that is of little account. Legislators, Dr. Adams thought, were

in gross ignorance of the standard of dental education. Dr. Adams did not take kindly to the idea of a stenographic report of his speech, but commended the idea of clinicians bringing with them a written description of their clinics. Favors the election of the officers at the last regular meeting in the spring, and the printing of a regular programme for the year, and deplored the fact that such had not been done last year. The making of a Dominion dental educational standard was commended. Dr. Adams thought that perhaps the reason for the large number of Canadian students attending American dental colleges was that a number of Canadians of Ontario were taking an off year there.

Dr Trotter—Dr. Webster's address was a fitting close to a very satisfactory year of active work. The election of officers in June would not bring about an activity of the officers during the summer in preparation for the winter as was claimed. It was thought that a society with the standing of the Toronto Dental Society should do a great deal more to entertain its visitors than it has in the past. In fact, he thought it would be wise to hold the Ontario Dental Society meetings outside of Toronto, so that every man would have to leave home to attend.

Dr. McIlhinney's idea of spreading pamphlets on dentistry for popular education was not looked upon with favor. The education of the public should be the work of the societies, and not the Board. He favored the idea of popular lectures on dentistry.

Dr. Trotter thought that the Royal College of Dental Surgeons should be a grand national dental educational institution to educate as many Canadians as possible. Dr. Trotter hardly believes that the four years' course was prompted by a wish to become public benefactors.

Dr. R. J. Reade said: Our retiring President has favored us with a very live and important valedictory address. He has taken a very commendable stand when he desires not to be fettered within the narrow confines of this Society, but to be free to deal with the interests of dentistry the world over. This is a truly logical position, for that which affects dentistry in one country is sure to have its influence on the rest of the dental world; so it is well to leave the boundaries of our own country and to zealously watch the different moves of the various bodies of dentists.

The President has said so many wise things, and has said them so well, that I see no opportunity to perform the part of critic, but rather to accentuate his contentions by agreeing with him.

In the first place, as to the clinician reporting his own clinic,

there seems to be no alternative if a correct report is desired. The clinician will be saved much chagrin if he himself performs the duty of reporter, and he will not have the mortification of reading a report of his clinic that has little reference to what he desired to demonstrate.

In reference to the election of officers of this Society in June instead of November, it seems that such a procedure would be of much advantage to the incoming president, inasmuch as he would have time to formulate his ideas, and consider the ways and means of making his year a success. As a result, the Society might reasonably hope to be benefited.

There is a very important item in the President's address that calls for much thought, namely, the nationalization of dentistry. What does it mean? Perhaps it might mean such legislation as would affect Canada, or it might have a wider scope and relate to the British Empire. However, I am inclined to think that just at present it refers to Canada alone. Later on it may mean more. It does seem a very narrow condition of affairs that the dentist, after a compliance with a long course of arduous work, should be compelled to confine his operations to one small section of his own country. It is not wise nor just. Let us get to the root of the matter; what is the object of dental legislation? First and foremost, to protect the public, as far as may be done, from unskilful persons; and a secondary consideration, as a natural result of the first, to protect the dentist. Are we not all one people? Do we not all need the same skill in the dentist? Should there not be a Dominion law that would protect all Canadians alike? What right have the people in one Province to be better protected by legislation than their brothers in another Province? It is manifestly a relic of past ages to set up such barriers in one's own country. Let those who are in a position to do so endeavor to get a general council of dentists, and find out the difficulties in the way of having a General Licensing Board; and, if difficulties exist, we might set about overcoming them.

The essayist says that Trinity University is interesting herself in this matter. Such is the case, but I hardly dare venture to enter upon the details of Trinity University curriculum in dentistry, because it would involve a number of points of great interest, and might have a tendency to divert the discussion from the valedictory address. However, I should be very glad to have the honor of presenting the subject to you at one of your dental meetings, if you thought it of sufficient interest.

The President states that the course of dental studies is to be increased to four winter sessions of seven months each. This is coming up, and should have a tendency to turn out good men

and deter those who are lazy from entering upon the study of dentistry. When we see the course so long each year, namely, seven months, it leads us to consider the question of pupilage. Has not the college, by increasing the number of years, and also the number of months in each year required in the course, rendered the primary object of indentures void? Should not the dental student have a well-deserved holiday? In the case of *some* students, would it not prevent them from coming in contact with unworthy practices if no indentures were required? Would it not be a benefit in so far as it would prevent certain dentists from inveigling unwary boys into signing indentures for the sake of what work they might get out of them for nothing. Of course it would be of great advantage to the student to be in certain offices, but then there is so much harm in being in certain offices that the question perhaps should be optional.

The army corps—well, that is so simple a question that it does not need proof. We must lament, and try to overcome the ignorance of those in authority. A dentist is just as much needed in the army as a surgeon or physician, and more needed than the piano and kitchen range.

Dr. Wilkinson said that there were many suggestions in the President's address that he could endorse, and that there were many things he could not endorse. He was in hearty sympathy with army dental corps, and had thought a good deal about the matter. He thought that one dentist might be attached to each regiment or to the regular medical corps. A suggestion was made to have a legislative committee appointed by the Toronto Dental Society, whose business it would be to interest themselves in such matters as the army dental corps and the formation of a Dominion Federation of Dentists. Would commend the publication of information on dentistry in the daily papers in a form suitable for the public to read, but opposed the idea of the distribution of pamphlets. In the discussion, Dr. Reade spoke of doing away with the indenture system of dental education. This Dr. Wilkinson would strongly oppose, and said that the profession is more capable of teaching practical dentistry than the teachers and demonstrators in the college. The election of officers in June was favored, and also the holding of the Ontario Dental Society outside of the City of Toronto. Strongly advocated the advertising of the R. C. D. S. in Great Britain and the United States, and thoroughly throughout Canada, so that every Canadian might know the standing of the institution as compared with others.

Dr. W. E. Willmott asked if the President's address was to be published, and if so it should be altered in some respects.

He thought that, as the Board had not yet fully decided that any alterations should be made to the college building, that it would be just as well if this matter be not published. He also took exception to the statement that there were only two hundred students in the Canadian dental colleges last year, because there were sixty undergraduates in Ontario indentured, who could not attend college last year, and if these were added to the two hundred in attendance there would not be so much difference between the Canadians in attendance in United States and those in Canada. Dr. Willmott also made the statement that the officers of the Ontario Dental Society hold office until their successors are elected, and consequently the officers elected two years ago are at present in good standing. Dr. Willmott thought that one reason the Board had for not allowing the public to know the standing of the college was to hinder students from entering the profession, and besides, the college building was overcrowded. But in the past year or two there has been a falling off in students, which now makes it possible to give good accommodation for non-matriculant students. He also said that the announcement of the college is not sent to all of its graduates, only those in Ontario receiving them. But during the last year announcements were sent to all the dentists in Manitoba, North-West Territories and British Columbia. He thought there was no excuse for a dentist in Ontario for not knowing what goes on in the college, when he has the annual announcement.

Dr. Chas. E. Pearson said that, since his name was mentioned in the address, he would say that at some future time he would make a report to the profession in reference to the National Educational Federation of Dentists, which held its meeting in Cambridge, England. Dr. Pearson expressed himself as being most courteously treated by the profession of Great Britain. Dr. Brophy, of Chicago, also showed him many kindnesses. Dr. Pearson visited several dental hospitals, and judged from the great changes and alterations being made, that the profession in England should follow the remarks of Sir Michael Foster in dental education, that is, educate the student in dentistry first and essentially, and medically later. Original research work in England is far in advance of what we are doing in Canada.

Dr. Webster, in closing the discussion, said that he did not expect that every one would agree with all the sentiments expressed in his address. However, he wished to thank those who had taken part in the discussion, but wished to reply to one of the speakers, that inasmuch as the Board had appointed a building committee, and that every official act of the Board should

be known to the profession, they could hardly have any reasonable objection to our talking about the advisability of increasing the size and efficiency of the college building. Again, admitting that there are sixty undergraduates in Ontario who are not in attendance at college, the fact remains that more Canadians are being educated in dentistry in the United States than in Canada, a condition that should not exist, and it is our duty as citizens of Canada to correct, as far as possible, such a state of affairs. Prohibiting students from entering the R. C. D. S. does not prohibit young men from studying dentistry, as is shown by the number who leave Canada for their education. The Board is educating at a profit, and why should it object to taking students, especially those who do not intend to practise in Ontario. The Annual Announcement gives but a very limited idea of the course given in the College, *e.g.*, How could one find out from the Announcement how much histology is taught, or what the course in practical chemistry amounts to? All the subjects recently added to the curriculum should be written up—well, at least once.

OFFICERS OF THE ONTARIO DENTAL SOCIETY.

President, Dr. H. R. Abbott, London; Vice-Pres., Dr. J. E. Wilkinson, Toronto; Sec., Dr. Eidt, Stratford; Treas., Dr. C. E. Klotz, St. Catharines; Supervisor of Clinics, Dr. G. S. Martin, Toronto Junction. Representatives from Districts: No. 1, Dr. R. E. Loucks, Smith's Falls; No. 2, Dr. D. C. Smith, Stouffville; No. 3, Dr. W. E. Willmott, Toronto; No. 4, Dr. F. Kilmer, St. Catharines; No. 5, Dr. E. Hart, Brantford; No. 6, Dr. W. Bruce, Kincardine; No. 7, Dr. Robins, Sault Ste. Marie. Programme Committee: Drs. Guy G. Hume, H. E. Eaton, and A. J. McDonagh, Toronto.

ONTARIO DENTAL SOCIETY ANNUAL MEETING.

THE Programme Committee of the Ontario Dental Society have set the date of the annual meeting for February 17th, 18th, and 19th, 1902. A good programme is in preparation.

WILL the Secretaries of the State Board of Examiners of the different States please send a list of the names of examiners and officers of each Board, to the Secretary of the National Association of Dental Examiners.

J. ALLEN OSMEN, Newark, N.J.

Correspondence

NATIONALIZATION OF THE DENTAL PROFESSION OF CANADA.

Every Province in Canada is in favor of a National Dental Meeting in Montreal next August.

The following letter was sent out to every dental board in Canada in the last week of September, and inside of one month replies were received which speak for themselves:

DEAR SIR,—The DOMINION DENTAL JOURNAL is at present the only part which helps to make up the profession of Dentistry that is at all national in character in Canada. There is no society, association, board or college that aims to have any influence outside of its own Province. There is not even a dental supply house in Canada that aims to do business in the whole country.

Because of the national character of the Journal, and because of its being the first in the field to advocate the nationalization of the Dental Profession of Canada, it now assumes the task of bringing about a meeting of the legally appointed dental representatives of the various provinces, to discuss the question of giving our profession a broader and more national character.

It is true that the DOMINION DENTAL JOURNAL, nor anyone else for that matter, has no authority to arrange such a meeting, but after consultation with several prominent men in the profession, it was thought wise that it should assume the duty.

The nationalization of the professions of Canada and of the Empire is desired by every thoughtful British subject. The Hon. G. W. Ross, Premier of Ontario, in a speech at Birmingham, England, a few days ago, said that the right to practise a profession in one part of the Empire, should give the right to practise in any other part of the Empire. With this broad proposition in mind, why cannot the Dental profession of Canada take the first step towards the ideal?

A Canadian dental organization is desired, so that, as British subjects, as Canadians and as dentists, we may become better acquainted and organized, and thus be the better prepared to further the interests of our country and of our profession.

At present we cannot take part in any international congress or in the International Dental Educational Federation, because there is no authority in Canada to make official appointments to such gatherings.

At present we desire to have a dental corps appointed to

the Canadian militia, as it exists in Great Britain, but we have no national organization to bring such matters before the Dominion Government—being unorganized, our efforts lack weight.

There is no uniform dental educational standard in Canada; this prevents our having dental recognition in Great Britain. A standard should be made so high that anyone holding such a qualification would be eligible to practise in any part of the Dominion or the Empire without further examination.

It must be clear to anyone that our present methods of dental licensing and education are very provincial and narrow, and in fact unpatriotic, because they often compel students to obtain their dental education in a foreign country. For further reasons for such an organization and discussion, see editorials in the DOMINION DENTAL JOURNAL during the past few years, and the writings of S. W. McInnis, M.P., of Brandon, Man., J. B. Willmott, Dean of the Royal College of Dental Surgeons, Toronto, Ont., S. W. Stevenson, President of the Quebec Dental Association, Montreal, as published in the DOMINION DENTAL JOURNAL, September, 1900, October, 1900, and February, 1901, and W. D. Cowan, President of Dental Board, N.W.T., September, 1900.

As Manitoba and Ontario have appointed representatives to meet similar representatives from the other Provinces and Territories to consider the whole question of organization and nationalization of the profession, will you interest your Board in the matter, and have a representative appointed to meet the others at Montreal, August, 1902, at the same time as the next meeting of the Canadian Medical Association. Very advantageous rates can be obtained at that time.

Will you write me what your own opinions are on such a movement, and state what your Board or official association is likely to do in the matter? Let us be in earnest in this matter, and remove from the profession of Canada what is its greatest hindrance to progress and national recognition.

An answer to this letter is expected from you.

Yours fraternally,

A. E. WEBSTER.

St. John, N.B., September 30th, 1901.

DEAR DOCTOR,—Your letter *re* Dominion Dental Organization received. New Brunswick is in favor of a suitable scheme, provided one can be formulated. Will call on you in Toronto October 12th.

FRANK A. GODSOE.

[In conversation Dr. Godsoe said that Dr. Murray and himself had been appointed to draw up resolutions. He

also said that he was in favor of holding a meeting in Montreal and that New Brunswick would send official representatives and a large contingent to the Association meeting.—EDITOR.]

Brandon, Man., October 4th, 1901.

A. E. WEBSTER, ESQ.

MY DEAR WEBSTER,—Yours of the 25th ult. to hand, also September number DOMINION DENTAL JOURNAL. Glad to see our Society's proceedings given liberal space. West Canada Dental Society doing good work and full of push.

Re letter, I have never seen Dr. Willmott's scheme other than a few remarks in Journal—these were only remarks upon scheme as proposed by myself. I shall endeavor to have Provincial Board appoint one or more delegates to convention mentioned in your letter, and will try to be present myself.

I have given the matter some attention and see comparatively few difficulties in the way of carrying out the scheme. If boards agree to act it will be necessary to provide some sort of programme. This also you should undertake, and in that I am at your command. Will do what I can for any part of programme you think best suited to me, or where I can be most useful.

Did you send letter to Dr. Bush or Dr. Mathison, Winnipeg? I think one or both of them were appointed to act with me *re* Dominion Convention. With kindest regards and wishes for your success.

Sincerely yours,

S. W. McINNIS.

P.S.—Dr. Frank Woodbury, Halifax, was appointed by Nova Scotia Society to act with me in pushing Dominion Registration. Better communicate with him.

S. W. McI.

Victoria, B.C., October 11th, 1901.

DEAR DOCTOR,—In regard to the formation of a Dominion Dental Council, I received a communication from Dr. McInnis; of Brandon, some time ago, and handed it around to different members of the Board and also to the Secretary of the British Columbia Association, with the request that he call a meeting. It is a very hard affair to get a representative gathering in this country owing to distance between points, but after a discussion with Drs. Jones and Hall, we are going to make a special effort to have the proposition discussed at a special Association meeting. I myself can see many big advantages to be derived from the adoption of a standard examination for Canada, and am one of those who believe that a good matriculation examination could not but prove a strong means of inducing public respect for our profession.

Anything I can do for you in the way of procuring information or otherwise will be a pleasure.

Sincerely yours,
RICHARD NASH.

Regina, N.W.T., October 12th, 1901.

DR. A. E. WEBSTER, 93 College Street, Toronto.

DEAR DOCTOR,—Yours *re* Dental Convention for the Dominion received. Personally I am heartily in favor of it, and as an indication of the position of the Territories on the matter might quote a minute from the journal of proceedings of our Association meeting, held twelve years ago next March, and reiterated almost annually ever since. The minute is to the effect that this Association urges the formation of a Dominion Dental Association, and a uniform law for the whole Dominion.

You can depend upon it the North-West Territories will have a representative there.

Yours respectfully,
W. D. COWAN.

Winnipeg, Man., October 13th, 1901.

MY DEAR WEBSTER,—*Re* my opinion on Dominion standards. The proper thing to do is to have a meeting, as suggested, and have the whole thing discussed from every point.

Sincerely yours,
GEO. C. MATHISON.

Montreal, October 10th, 1901.

DR. A. E. WEBSTER.

DEAR DOCTOR,—Now, about that meeting next August, I am certainly in favor of it. I am sure we could make it a success. For my part I would be quite disposed to start the organization here and do all I can. I will submit the question to our next monthly meeting, and I will let you know the result.

Yours very truly,
EUDORE DUBEAU,
Secretary D.A.P.Q.

Toronto, October 15th, 1901.

DEAR DR. DUBEAU,—Your letter to hand. It has been thought wise to have a regular scientific and clinical programme at the proposed meeting. Dr. McInnis and others having suggested the immense value and pleasure of such a gathering,

Dr. Godsoe, of St. John, suggested to me that the Quebec Dental Association, together with a representative from each Province, should get up the programme. We can secure the assistance of some very noted and capable Canadian dentists for such a meeting.

Montreal is central, and has splendid accommodation. The Quebec regular meetings can be held at the same time. New Brunswick will send fifteen or twenty, Ontario should be represented by over a hundred, and the West is never behind on any enterprise they undertake. I hope to hear what you think of the suggestion. The legally appointed representatives may meet apart from the General Meeting to consider the Dominion Council question, and report their progress from time to time, so all may know at once what is accomplished.

Yours fraternally,

A. E. WEBSTER.

Montreal, October 20th, 1901.

MY DEAR DOCTOR,—Your favor of October 15th to hand. Now, about the meeting. I have submitted the question to our monthly meeting, and our Board is quite disposed in favor of such a meeting; moreover, we feel proud that you have chosen Montreal for the purpose. We have in the city a little over one hundred dentists practising. I am sure four-fifths will attend. We may also rely on about twenty-five outsiders. Your proposition of having one member of each Province to assist us on the programme is a very good one, and I entirely endorse it.

As you say, Montreal is central, easy of access, and we have plenty of good accommodation.

Now, I am ready for work; and with your co-operation there is no doubt in my mind that we can make it a success. I am awaiting for further instructions from you.

Yours truly,

EUDORE DUBEAU.

Woodstock, October 18th, 1901.

DR. A. E. WEBSTER, Toronto, Ont.

DEAR DOCTOR,—In reply to yours of some few days ago, would say that I most heartily approve of the effort to form a Dominion Dental Council. I think every dentist in Ontario should approve of it. You can rely on my support in trying to promote the scheme.

Yours truly,

A. M. CLARK.

WHY NOT HAVE DOUBLE AFFILIATION?

To the Editor of DOMINION DENTAL JOURNAL:

When James Whitcombe Riley and Bill Nye travelled together, giving a joint entertainment, the humorist had great fun with the poet. Once, in introducing Riley and himself to the audience, Nye remarked, "I will appear first and speak until I get tired, then Mr. Riley will succeed me, and read from his own works until *you* get tired." The entertainment which this paper proposes to give is a discussion of the desirability of affiliation with Trinity University; and certainly it is a subject which has not been dealt with to any great extent in the pages of this Journal. If my readers have an attack of ennui while perusing this article, we bespeak at the outset their forgiveness.

While we know that the affiliation of the Dental College with Trinity University is a subject which has agitated the minds of many persons, first as students and afterwards as practitioners, it seems as if everyone were waiting for his neighbor to take the initiative in moving to bring about a result which so many desire. In entering upon the discussion of this subject now, we desire to avoid for ourselves, and trust that others who may carry on the discussion will also avoid, all acrimony, and all personalities except in so far as we claim the right for ourselves and for others to criticize in a proper spirit the official actions of men who hold public positions.

The question why Toronto University should hold the practical monopoly in granting degrees in dentistry is one which has been discussed more frequently, perhaps, than the authorities of the Dental College are aware of. The laudable efforts to establish the Dental College on a broad and liberal educational basis cannot be fully realized so long as the freedom of the students is restricted, and artificial barriers are maintained to deprive them, in practice if not in theory, of the freest and fullest liberty to choose for themselves the university in which they are to proceed to their degree. If a student, in the exercise of his own independent judgment, prefers to acquire his professional title from Toronto, well and good—he should be at perfect liberty to do so; and, on the other hand, we maintain that any student who prefers Trinity University should also be free to follow his own inclination, without any pressure being brought to bear upon him by the College authorities to persuade him to another opinion, and, above all, without any hint or suggestion that loyalty, either to the College or to the profession, requires that all the members should graduate in one University.

We maintain, and we believe that the profession at large will support the contention, that the principle of equal rights, without favoritism or partiality, should be followed in dealing with this matter. On this principle, we ask what objection can be urged against making application to Trinity University for the affiliation of the Dental College with that University along the same lines, and with the same privileges, as those which characterize the existing affiliation with the University of Toronto? A double affiliation of this kind would tend to remove the existing friction and to free the authorities of the College from the charge of unduly favoring one University to the practical exclusion of the other. We do not say that this charge is well grounded at the present time; we only know that the charge is often made, and we believe it would be wise policy to remove every semblance of occasion for it.

That advocates of a favorite scheme are naturally sanguine, and perhaps credulous, we are well aware; but we wish to express our strong conviction that any long continuance of such a policy as has prevailed in the past will lead to a condition of affairs so manifestly unjust and unreasonable that the profession at large will rise in their might to demand redress—and then the impetus of the tide of reformation may carry them far beyond the mark intended. This is a danger to which some persons deliberately shut their eyes; nevertheless, it is one which we may have to face, and we ought to guard against it while there is yet time.

Opinion has been changing rapidly during the last few years. For a considerable period the profession viewed this question with comparative indifference, feeling content to leave the arrangement of such matters in the hands of the College authorities; but now they are beginning to realize the imperfections of the system, and to agitate for a remedy. The remedy lies ready to hand—affiliate with Trinity. The liberty and freedom which this double affiliation would introduce would cause the present perplexities and confusions to melt away like mist before the rising sun. Again, we ask, what valid objection can be urged against affiliation with Trinity? None that we are aware of. In Trinity are to be found all the advantages that may be obtained from the Provincial University, and there are not a few members of the profession who prefer the Trinity connection. No doubt there were at one time many excitable opponents who credited the fantastic allegations of certain men, and shuddered at the forecast of impending ruin, when affiliation with Trinity was proposed. In their more depressed moments they conceived

that Convocation would be opened by the Archbishop of Ontario, or the Metropolitan of Canada, in vestments of most dangerous color and cut! That the College would be closed against all students who did not regularly attend Matins and Evensong, and an Act passed forbidding the Dean to lift up his voice against the squandering of the surplus on faggots for fires, to be kept constantly burning in front of the College buildings for those who would not subscribe to the Thirty-Nine Articles!!

Such elevating sentiments are covered with the mildew of centuries, and as we drag them out of their obscurity people wonder that men silly enough to imagine such nonsense were left free to move around among sane men of the present generation.

But let us speak more seriously of this important point. The contention that Trinity is a denominational university cannot be successfully defended. It is true that she maintains a Divinity School; but Toronto University also, which is avowedly a secular institution, has Divinity Schools in affiliation with it. It is also true that students in Arts of Trinity College, if they are members of the Church of England, are required to attend certain of the services of that Church. But students of the Dental College, proceeding to a degree in Dentistry in Trinity University, are brought under no religious tests whatever; no question of any kind will be asked of any dental student as to his church belief; and no one has any cause to fear that he would lose his particular religious identity, or have his religious liberty interfered with, by going to Trinity. It surely must be known to everyone that Trinity Medical College, for example, comprises students of almost every church; that the worthy Dean who presides over it is a well-known Presbyterian; that the lecturers and examiners are appointed without any regard to their religious belief, and that in no way whatever is any kind of religious test imposed. So would it be with the Dental College, if it also were affiliated.

Obviously the times have changed. Years ago when the Dental College had about the same educational standing as a veterinary college or business school, Trinity University was asked to accept us as an affiliated college; she refused. So also did Toronto University. But the standard was gradually raised to a creditable level, and after considerable consideration, and with many misgivings as to the wisdom of the course, Toronto University at last reluctantly granted us affiliation. But Trinity was not consulted at that time, and has not been consulted since.

There are many educational institutions which are affiliated with two or more universities. The Conservatory of Music, for

example, is affiliated with both Toronto and Trinity Universities. Trinity Medical College is also affiliated with these two Universities and with the University of Manitoba as well. Here, then, are examples sufficient for our purpose; for these Colleges do not seem to suffer by their dual affiliation. On the contrary, they evidently benefit by it. Then why should we be debarred from enjoying a like benefit.

We trust that this discussion will be continued, and the whole question thoroughly thrashed out, so that it may be plainly demonstrated what policy the dental profession would like to see carried out in this important educational matter.

H. WALLACE BELL, D.D.S., L.D.S.

"ONTARIO DENTAL SOCIETY."

To the Editor of DOMINION DENTAL JOURNAL:

DEAR SIR,—In reply to Dr. Chas. E. Pearson's letter on the "Ontario Dental Society," published in the last issue, I desire to call attention to twenty-three statements which are misleading, incorrect, or not true. They will be enumerated in the order in which they occur:

1. "We are in an unfortunate state of existence." We are doing well, and are fortunate in many respects.

2. "Without harmony." There is much of harmony.

3. "Without organization." We have organized societies, viz.: Eastern Dental, Western Dental, Toronto Dental, Ontario Dental, London Dental and Brantford Dental, also electoral districts and a competent, responsible Board.

4. "Without unity."

5. "Without strength."

6. "Without means of provincial progress."

7. "Stranded." By no means is this true.

8. "Too proud to move this way or that." We know many who certainly can and do move in very practical manners.

9. "Too dignified to be energetic." Some of us may even lack in dignity, but most are energetic.

10. "Too much taken up with private affairs to take an interest in public questions." Far from correct. Dr. H. R. Abbott is a military officer; Drs. Eidt and S. Moyer are aldermen; Dr. Geo. Martin is a school trustee; Dr. W. E. Willmott is a leading member of an important literary society. Some hundred others have public positions.

11. "What has become of the officials of the Ontario Dental Society? No one seems to know." They are all known, and can be named at any time.

12. "The Society has gone off like the mist," etc.
13. "A sweet rose that blossomed and withered."
14. "Nothing but the faint memory of its fragrance."
15. "Our Province is disunited." No, no!
16. "Nor is such possible (national unity) while in this condition."
17. "Think it only courteous to the *scattered fragments* of the Executive." The Doctor now speaks of something existing which before he had described as "gone off like mist." The Executive is complete, organized, and is at work. The date of the Convention for next year is named. The character of the programme and other matters are under discussion.
18. "Apparently defunct Ontario Society."
19. "No one knows the complete list of officers." I herewith forward a list to you, sir, through the Editor of this Journal.
20. "It becomes necessary for each member to hold up his hand and make himself known."
21. "The minute book . . . is reported lost." It is in the possession of Dr. Eidt, of Stratford, the Secretary.
22. "But no one moved." Many are actively planning and preparing.
23. "Time for organization is at hand." Organization took place years ago.

Let me say I agree with the Doctor in his statement that one of our number, knowing more about dental education than all the Province put together, is no cause to censure him. He may refer to Dr. J. B. Willmott.

It seemed to me only fair to make definite mention of the above points. My confrere, Dr. Pearson, expresses an interest in the affairs of our Royal College of Dental Surgeons which is certainly commendable and worthy of the sympathies of all.

Yours fraternally,

JOHN E. WILKINSON,
Vice-Pres. O. D. S.

Review

Studies in the Psychology of Sex.—The Evolution of Modesty; The Phenomena of Sexual Periodicity; Auto-Erotism. By HAVELOCK ELLIS. Published by F. A. Davis, Philadelphia.

A book of 275 pages, admirably arranged and well printed and bound. The author's presentation of the three studies

named in the title is careful and clear. His labors in collecting data from so many widely different sources are fruitful in producing an interesting and instructive work which, though complete as far as it goes, is intended to prepare the way for analysis of the sexual instinct. In expressing doubt that his work will find favor in England, the author says: "In matters of faith, liberty of prophesying was centuries since eloquently vindicated for Englishmen; the liberty of investigating facts is still called in question, under one pretence or another, and to seek out the most vital facts of life is still in England a perilous task." Hence the work is published in America, where a wider medical and scientific audience will appreciate it. Speaking as an English investigator, he says he may take for granted that any serious and precise study of the sexual instinct will not meet with general approval. A statement affirming the spherical form of the earth did not meet with general approval either, probably for the same psychological reason. So until it be shown that ignorance of the subjects treated in this volume is a benefit, we shall consider it an admirable work for the advancement of useful knowledge.

The clearness and simplicity of its style will permit any intelligent person to read it. The absence of unwarranted statements and the wealth of interesting facts set forth, give the work a scientific value which should commend it to the student of psychology. We venture the opinion that, were such knowledge as this book conveys more common outside the medical profession, the "lost manhood" and "errors of youth," quacks of daily paper advertisement would make less profit out of the unfortunate whose chief "errors" and "weakness" is simple ignorance, or the result thereof, concerning the phenomena of which this work treats.

We are pleased with the work as a sign of the times when conclusions founded upon well ascertained facts shall take the place of dogmatic and traditional views so often advanced by those who have made no adequate inquiry.

W. C. GOWAN.

Dominion Dental Journal

EDITOR:

A. E. WEBSTER, M.D., D.D.S., L.D.S. - - - - TORONTO, CAN.

93 COLLEGE STREET

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VOL. XIII.

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No. 11.

PRECEPTORS.

(Continued from October issue.)

Having discussed the kind of student that it is desirable to have enter the profession, it is only fair to discuss the kind of preceptor a student should have. In Canada the student must enter into an agreement with a dentist to serve him for a period ranging in the different provinces from three to four years; it is true that in some provinces the time spent at college is deducted from the whole term of pupilage. The wisdom of such an apprenticeship must very often set the student thinking. He says, and rightly too, "If I am entering a learned profession, why should I bind myself to a dentist just the same as a blacksmith, a shoemaker or a carpenter boy does to his 'boss?'" This strikes the young man who has attended public school and high school, and perhaps the university, as rather a backward step, because he knows that the public takes a person for what he is found doing. He is found in servitude under written agreement and sometime bonds, the same as the other apprentice boys about the town in which he lives, if there be any, because in America apprenticing is almost gone out of existence. It may be argued, of course, that the dental student is not in servitude, and as many of the responsibilities rest with the preceptor as with the student. This may be all true, but

the public all the while sees the dentist's apprentice with the same eyes that he sees the tailor's. The preceptor himself so classes his student and brands his profession as one of the trades when he makes a messenger boy or a charwoman of the young man who should be studying dentistry. The young man who is properly educated in a free country resents the idea of being an apprentice. The whole tendency of compulsory pupilage, as it is carried out in some offices, is to impress the student with the idea that he is going through hardships now learning a trade, and later, if he will only bear with it, he may have a student himself to sweep the office, clean the cuspidor, run messages, and perhaps milk the cows and attend to the horse for him. With such an example, can it be wondered at that young men obtaining their education do not have ethical and professional ideas? The wonder is that so few of our men trained under such a system go wrong. The professors in the colleges are often accused of not doing their duty when young men go out lacking in professional instincts. This criticism is not altogether just, because the example of the profession, as a body, and the preceptors, and the compulsory unethical practices by the student for years in an office have more power as a teacher in ethics than any amount of fine speeches from the rostrum. A preceptor is lacking in his whole duty to his student if he does not instruct him in all his methods of practice. Now suppose this would-be instructor believes that the dental profession is a trade or business, and that he puts up half a dozen or so very large signs with all kinds of lying phrases upon them—he advertises that he will insert fillings at twenty-five cents each; but when a patient requires a filling, he is told that the material used in the twenty-five-cent filling is only amalgam, and that for this particular case silver would be much better at fifty cents, or platinum and gold at one dollar, while as a matter of fact all three materials come out of the same package. A student who is under such instruction and compelled to practise such methods for two or three years surely must be influenced by it. Again, suppose this preceptor never attended college or did so a quarter century ago, and has not read a dental text-book for twenty or twenty-five years, has never taken or read a dental journal or attended a dental society meeting in his life, and has lived in a small town and become interested in horses, chickens or the bar-room, or in many cases all three; the office is equipped with an out-of-date barber chair, a vulcanizer, a lathe, a few rusty forceps, about a dozen excavators, perhaps an automatic plugger, and an excellent supply of dust and fly dirt, the whole occupation of the man that runs the place being "pulling teeth" and making "false sets," is it any wonder that a student in such an office for two or three years should be a sloven and lack what is essential to a scientific dentist? Is it not clear to anyone why young men sometimes lack professional instincts?

There are young men year after year entering the senior class who have completed their pupilage and have not yet put in a gold filling. Up to last year the College required only eight gold fillings for examination. Would a young man likely do good gold operations with such a limited experience? Yet many a one has gone out to practise with this limited equipment. The College presumed that the preceptor had done his duty. Conditions are improving, however. The College requires twenty-five gold fillings now for examination, and that the student put in, in all, one hundred fillings before coming up for examination. Again, the tendency is to assume the responsibility of teaching in the college. The history of progress in the Royal College of Dental Surgeons for the past five or six years indicates what the Board thinks of the value of the preceptor as a teacher. It is only seven years since the College required only three gold fillings for examination. One rubber plate was all the prosthetic work required. Students were also required to make a metal plate and some crowns and a bridge as technique. The Board saw that the only way to educate students was in a college, and consequently they have assumed the whole responsibility for dental education. The technic work now required is legend. It would take a whole page to even name the requirements in this department. The work now required to be done for patients has increased seven or eight hundred per cent. in the past five years. The truth is the Board has taken the whole responsibility of educating the student; but it must not be supposed that the right kind of preceptor has no place in dental education. The source of the dental quack in Canada to-day is the preceptor's example and the licensing of the incompetent.

About four years ago Dr. G. S. Martin, of Toronto Junction, published an article questioning the advisability of continuing compulsory pupilage. Since that time nothing has been said on the matter in Canada, but in Great Britain, whose example we followed in dental education, a change has been made whereby a student may put in his pupilage in a dental hospital, thus avoiding the necessity of having a preceptor. The Board of the Royal College of Dental Surgeons passed a by-law about three years ago which provided that no dentist should have more than two students at the same time. This prevented the dental parlor men from running a business with dental students as workmen. The next move should be to select the dentists who may be preceptors. It has been suggested that only those dentists who are members of a dental society be allowed to have students. This would insure an ethical preceptor at least. Members of the teaching staff of the college must show themselves to be competent before they get an appointment, and why in the name of common sense should a dentist who is known to be incompetent be allowed to instruct a student? The method followed

in England, or the one here suggested, ought to receive consideration in Canada. To argue that a student may select a good preceptor under present arrangements, is not even as good an argument as to say that a patient should be allowed to select anyone he wishes to treat his diphtheria, whether he be a physician or not. How is the dental student to know who is or is not a good dentist and at the same time a good preceptor? If he ever finds it out it is usually too late. The fact is that the best dentists do not want a student nor do they take one, so the young men are often driven to the advertising man to get a preceptor.

In some provinces in Canada the method of instruction by a preceptor alone still obtains. It is just as unnecessary to attempt to show the inadequacy of such a system of dental education as it would be to attempt to show that children can be better trained by a person whose business is not teaching. In other provinces attendance at a dental college is necessary. The Board of the Royal College of Dental Surgeons, when it asks the student to attend college, immediately after signing indentures in the three and a half year system, admits that the training in the college is better for the first year than in the preceptor's office. Every dental teacher knows that the Board's contention is correct. Then why, in the arrangement of the new four years' schedule, make it necessary to be in a preceptor's office for five months before attending college? During the first five months in an office a student is of little use to himself or his preceptor. With the present matriculation arrangements in Ontario a student will have to spend four years and ten months from the time he writes on and passes his matriculation until he graduates in dentistry. Then, why not relieve the student of the first five months' pupillage, which is admitted by the Board to be of little value, and by most dental teachers as being of no value, and in this way save the student one year and three months of the most valuable time in his life. It must be understood that the student by present arrangement would not be studying dentistry four years and ten months; not at all. He is waiting ten months to get an opportunity of putting in the first five months of pupillage. The time of our present matriculation examination makes this wait necessary. The matriculation certificates are usually out by the first of September, and if articles could be signed then, only four months' pupillage would be lost, while a year of the student's time would be saved. Some such arrangement should be made.

Inasmuch as the new curriculum does not come into effect before there is another meeting of the Board, there is plenty of time to weigh every point carefully. In the present state of feeling in the Legislature towards professional corporations, it would be very unwise to pass a by-law which would compel a young man

to spend five years in obtaining a four-years' course. However, a Board whose only error, if one was ever made, is on the side of leniency, will never allow any action of theirs to work a hardship.

So far only objectionable features of compulsory pupilage have been pointed out.

This subject will be continued in the next number.

BOGUS DIPLOMAS OF ILLINOIS.

Up to the present time, the dental profession of Canada has had little or no interest in whether it was possible or not to buy the degree of D.D.S. in the United States. The profession of Canada has always been too closely connected with the dental education of the Republic to the south of us to serve as a field for the sale of bogus diplomas. Canadians know the standing of every degree-conferring power in the Union. But something has come out in the recent investigations in the State of Illinois that is of direct interest to the dental profession of Canada and the whole British Empire. The title of L.D.S. has been distinctive of the British Empire, but it appears that the State Board of Illinois has been giving this title for a consideration to applicants who intended to practise in Germany. This title of L.D.S. was given to the candidate without examination or any educational qualification whatsoever. From now on, the dental profession of Canada will take a still deeper interest in the proceeding, because what was considered a distinctive title is being given for money instead of as a mark of education.

Dr. C. E. Bentley, of Chicago, in a letter to the *Items of Interest*, gives the following history of the scandal:

It seems that German cities have been infested for some time with dentists who held what are declared to be bogus diplomas from American colleges.

It is said that inducements were offered to German men to come to Chicago, where, for a consideration, they could obtain these diplomas after a few weeks' residence.

The matter was brought by the German authorities to the notice of the United States Consul, James H. Worman, stationed at Munich, Bavaria, who immediately put himself in communication with Governor Tanner concerning the matter. Governor Tanner invited him to come on and personally investigate. This Consul Worman was unable to do at that time, but he gathered all testimony possible, photographs of licenses and diplomas, etc.

Then followed the arrest and trial of one Gumpoldt, in Munich. The testimony taken in this trial showed that Gumpoldt arrived in Chicago in the spring of 1900, obtained a diploma and the degree of doctor of dental surgery from a Chicago Dental School, was admitted and apparently passed the Illinois State Board of Dental Examiners received a license to practise in the State of Illinois, and returned to Germany. He had only been absent from Munich a little over four weeks. Nor had he pursued previously any dental studies. This trial produced a storm of indignation against all American dentists residing in Bavaria. After Gumpoldt's trial and the confiscation of his license; Consul Worman put himself in communication with the Illinois Dental Board, but could get no satisfactory explanation as to the reason for the Gumpoldt license. At the same time he was in correspondence with Secretary of State Hay. The outcome of it all is that he came to America to unearth what he claims to be fraud. This is act first.

Act second opens at Milwaukee, where, in August, the National Dental Association held its annual meeting. At this convention Consul Worman laid the whole matter before the dentists in session, and openly accused the Board of Dental Examiners of the State of Illinois with fraud and the illegal issuing of licenses. The sensation caused by such an accusation can be imagined than described, and the dramatic climax was reached when Consul Worman openly accused Dr. J. H. Smyser, Secretary of the Examining Board, and hinted at the complicity of all the other members, with the exception of one, whose record had proved unimpeachable. This exception was Dr. James G. Reid, and when his name was pronounced it was greeted with hearty, enthusiastic cheers.

Events crowded quickly after this denouncement. Consul Worman was joined in his efforts by Dr. J. N. Crouse.

These two gentlemen, together with Dr. G. V. Black, Dean of the Northwestern Dental School, proceeded immediately to Springfield and laid the entire matter before Governor Yates. The Governor asked for the resignation of the entire Board of Examiners, which request had all the appearances of being the result of the visit of these three gentlemen.

Then followed the arrest of Dr. J. H. Smyser, Secretary of the Illinois State Board of Dental Examiners, and a member of the ousted Board. Dr. Smyser was arrested on two warrants, charging him with forgery and with issuing bogus licenses.

This action was taken by Assistant State Attorney Blair, after a consultation between the State's Attorney, Consul Worman, Dr. J. N. Crouse, and Attorney John J. Knickerbocker.

The evidences which were laid against Dr. Smyser were the Gumpoldt licenses, photographs of which Consul Worman had brought from Europe, and which Worman declared forgeries.

Shortly after this arrest, Dr. Smyser was arrested on two other charges, malfeasance in office and bribery, and was admitted to bail in \$3,500. The charge of forgery was *nolle prossed*, the experts in handwriting having proved that the writing on the licenses was not that of Dr. Smyser. He was heard on the other two charges on the 6th and 7th of September, and on Monday following, the 9th, Judge Kavanagh held him to the Grand Jury on the two charges mentioned above. The charge of bribery was made by Oscar C. Igney, who, in his affidavit, alleges that he paid Dr. Smyser \$400 for his license, which was granted as coming from the American College of Dental Surgery, which he never attended nor even saw.

It is generally expected that these events, startling as they seem, are only the beginning of an affair which may reach far back into the past and draw within its workings several who have hitherto passed unnoticed and unscathed. It is a very widespread impression that conditions revealed while Dr. Smyser was in office were but repetitions of what had been going on for many years under other administrations, and that Dr. Smyser only differs from others by being caught.

Here is a case known personally to the writer: A. G. Weisz, a German, hardly speaking the English language, came to Chicago and irregularly attended, for three months, the Chicago College of Dental Surgery. At the end of the fourth month he received a license from the State Board of Examiners which specified that he was a licensed dentist, having passed the examination. At the same time, in the annual report which the Board is compelled to present to the Governor, A. G. Weisz appears as a graduate dentist, accredited to the Chicago College of Dental Surgery.

Thirty-five cases similar to the Weisz affair have been unearthed by those working upon this matter, and these happened *before* as well as *during* Dr. Smyser's term of office.

All reputable dentists in Chicago, and, indeed, throughout the State, are heartily glad that many crooked methods, hitherto strongly suspected, now stand a chance of being brought to light and abolished. All are giving moral support to the investigation. Many are helping in a more practical way, and evidences and written testimonies are pouring into the offices of those who are heading this crusade.

The new Board of Dental Examiners, appointed on the 15th of August, consists of T. W. Prichett, White Hall, President;

J. G. Reid, Chicago (from the old Board), Secretary; Don M. Gallie, Chicago; Clark R. Rowley, Chicago, and G. E. Dameron, Arcola.

The dental profession of the State of Illinois has every confidence in these members of the new Board, and a lively faith in their disposition to do right.

SECRETARIES OF DENTAL SOCIETIES.

The DOMINION DENTAL JOURNAL aims to be the official organ of every dental society in Canada. It is always pleased to publish the proceedings of any and every dental society. In fact, it is through such society meetings that the greatest amount of its copy is obtained that is of value to the reading members of the profession. As a rule, societies are anxious to have their proceedings given to the general profession. They know that they will in that way reach every member of the profession who is worth reaching or whose good opinion or criticism are of any value. A good dental journal is a very important educator. Dentists meet and exchange ideas, which is the first step in dividing the professions from the trades. Societies are formed so that those who have advanced ideas may have larger audiences, and thus spread knowledge. The journal is the next factor, and has a still larger audience. It would seem to be the duty of every society, to its essayists and to the profession, to see that the articles read before it are given as wide a publicity as possible. The secretaries of many dental societies do not always realize the importance of the positions they hold. They accept all the honors but none of the responsibilities. There are dental societies in Canada the names of whose officers are not known outside of their own society, nor can they be found out. Not one word of what goes on at these meetings is ever known outside. They are to all intents and purposes secret societies. In three or four notable cases the Journal found out the names of the secretaries and asked for the names of the officers, and to send any essays or reports they had for publication. Although three letters were sent to one of these secretaries no reply was ever received. It is hoped that societies will call their secretary's attention to the fact that it is their duty to answer correspondence, even if they do not wish anyone to know who they are or what they do. This they owe to the society that has bestowed the honor of office upon them.

The Journal wishes to thank the great majority of secretaries of dental societies of Canada for very courteous and prompt re-

plies to correspondence, and for very excellent and painstaking reports of meetings. It is a pleasure to edit such work; in fact a great deal of it is all arranged for publication when received.

The Journal is wholly dependent on the profession for its copy, and wishes to express its gratitude to those who have so willingly contributed in the past. It is the organ of the profession, and is anxious to publish anything that is of interest and has for its object the spreading of knowledge.

Editorial Notes

DR. JOHN MCGREGOR (R.C.D.S., 1901) has bought the practice of the late W. A. B. McDonald, of Elora, Ont.

DR. FRANK A. GODSOE, of St. John, N.B., was a welcome visitor to Toronto in October. He says that the profession of New Brunswick is interested in the nationalization of the dental profession of Canada.

OWING to some delay in the publishing department, both September and October numbers of the Journal were late in being mailed. This we hope will not occur again, and that the Journal will be in the hands of the readers by the 15th of each month.

DR. W. V. B. AMES says that he does not believe in using gold pluggers with oval faces if the serrations are cross-cut, because under mallet force they may tend to draw the gold away from the margins. Oval-faced pluggers should have longitudinal serrations beginning at a centre, which is on a line of the long axis of the instrument and diverging therefrom.

Obituary

WILLIAM ALEXANDER BRUCE MACDONALD.

DIED—At Elora, Ontario, September 11th, 1901, William Alexander Bruce Macdonald, L.D.S., D.D.S., aged thirty-two years and ten months.

Dr. Macdonald was born in Elora, November 6th, 1868, being the second son of Mr. John Macdonald, license inspector for Centre Wellington. He completed his education at his birthplace in the High School, taking a third-class certificate, and shortly afterward went to Toronto, having secured a position as

bookkeeper with a firm on Spadina Avenue. He subsequently went on the road representing a wholesale drug firm in Saratoga, N.Y. About 1893 he decided to take up the study of dental surgery, and accordingly matriculated in the Royal College of Dental Surgeons, entering the office of Dr. Reid, of Fergus, and being graduated with the class of 1897. Shortly after graduation he commenced the practice of his profession in Elora, where his well-known ability won for him a steadily-growing practice.

During April, 1901, he had been unwell, and was treated for some time for kidney disease. About the 10th of June a sarcomatous tumor was discovered near the spinal cord. A consultation was held, and after an exploration had been made the surgeons decided that an operation could not be successfully performed on account of the seat of the tumor. He was removed to the Guelph General Hospital, where the toxin treatment was adopted, the results being exceedingly satisfactory. Pleurisy, however, set in, and death ensued on the 11th of September.

Dr. Macdonald was a close student, a skilful operator, and a progressive dentist. He was devoted to the honor of the profession and aimed to have a thorough knowledge of all that was latest and best in dentistry. His kind spirit and cheerful manner made for him many friends, and his untimely death is sincerely lamented by a large circle.

The deceased was of the Presbyterian denomination. Being a member of Irvine Lodge, A.F. and A.M., and also a staff lieutenant of the 30th Wellington Regiment, the funeral was both military and Masonic. The funeral procession was headed by the Elora Band, followed by the Elora and Fergus companies of the 30th, under command of Lieutenant Campbell. Knox Church Cadets, under command of Major Allan, came next, in advance of a large number of Masons, who preceded the hearse. The remainder of the cortege was composed of a large number of citizens from Elora and adjoining towns. The Rev. R. H. Horne, assisted by Rev. W. R. McIntosh, conducted the religious ceremonies at the grave, after which the impressive burial service of the Masonic Order was read by Mr. W. M. McMurphy.

H. A. CROLL.

NOTICE.

We would respectfully request city practitioners not to pay any subscriptions on account of the DOMINION DENTAL JOURNAL unless collector can give an authorized receipt for same. We have had some trouble lately along this line, hence this notice.

Dominion Dental Journal

VOL. XIII.

TORONTO, DECEMBER, 1901.

No. 12.

Original Communications

LECTURES ON CROWN AND BRIDGE-WORK.

BY F. J. CAPON, D.D.S., L.D.S., M.D.S., TORONTO.

(Continued from November issue.)

The incisors are often called upon to support the end of a short bridge, and where sound judgment is used they offer sufficient support for piers for a bridge of their own class; but if, for instance, a lateral incision were made, an abutment for bridge extending from second molar to lateral incisor, all intervening teeth missing, the result is obvious. The weaker pier would sooner or later, give away under strain of such unscientific principles, and bridge-work would add one more failure to its list of abuses.

If a straight line were drawn from *a* to *b*, Fig. 40, and another line conforming to the natural circle of the arch, from *a* to *b*, they will show the length of the fulcrum from *c* to *d*, which gives a lateral stress to the abutments, and already having force of mastication three times more than nature intended, would soon result in the loss of one or both piers. It is, therefore, evident that incisors used as piers of bridges should have no stress of mastication, but simply the work the teeth implies; an incisor is indicated as a pier for a bridge when it is intended to carry one of its own class.

In deciding the crown for an incisor greatly depends upon the sex, the stress it will be subjected to, the esthetic effect, the condition of root, the condition of gum-tissue, the relative position of the teeth, as to whether the root shall or shall not be banded. (This will be taken up more fully later under the head of porcelain crowning.)

The preparation of root for incisor crown, with or without a band, is pretty much on the same lines. A general outline has been mentioned under the head "Mechanical Preparation of the Root," but a more detailed description might be accepted when one considers its importance, upon which largely depends success or failure.

The shaping of the face of the root is a point upon which a great difference of opinion is expressed regarding the mechanical resistance, but I feel when I have satisfied the esthetic requirements, the resistance will be sufficient.

In reducing a crown, the drill, dentate bur and incising forceps are first used to advantage, as already alluded to in Figs. 5 and 6. Then proceed with the general shaping of the face of root, which is to follow the outline of the gum margin, and to have its surface about a line below this margin (Figs. 41, 42), drawing your attention to the correct and faulty cervical outline, as in Fig. 4. At the anterior aspect the casting should be carried a trifle



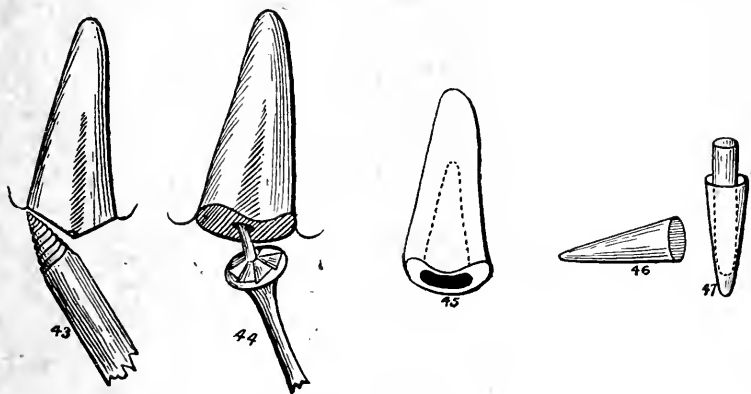
deeper than at the other parts, to ensure perfect hiding of the joint or band. This can best be accomplished without wounding the gum tissues by one of Evans' root-trimmers (Fig. 43), a dentate fissure bur, or the Ottolenqui root-facer (Fig. 44). After trimming the face of root thus far, there may still remain a ledge of enamel, which should be removed, as already described, by enamel cleavers. In the case of a post and plate crown, it may not seem necessary to remove this ledge of enamel, but if left either labially or lingually, or both, the crown when finished is liable to be prominent or bulky, a feature that suggests a falsity.

Post and plate crowns appear to me to be the most useful and artistic crown for cuspids and incisors, not carrying a bridge, and yet if the stress be equalized and the abutment roots in good state, they have always proven themselves equal to the task.

This crown has no distinct characteristic of its own, and because of its simplicity it is abused. In simple words, it has a

post fitted into an enlarged pulp-canal for support, and a plate that covers the face of the root. This simple description too often answers to the crown framed in general practice, whereby, if the same material were used to good advantage, fitting accurately, and finished with anatomical neatness, it would reveal results that the best practitioner would be proud of.

They are particularly indicated on a root which has lost no substance, or where the pulp-canal would have to be enlarged to receive a post or dowel of proper size. Should there be a loss of tooth-substance in excess of this amount, a band is advised for a support. Sometimes a canal has been carelessly enlarged, the root having sufficient strength, the crown becomes displaced, having trusted entirely to cement for security (Fig. 45). In such cases an enlarged dowel can be accurately made to fit the over-

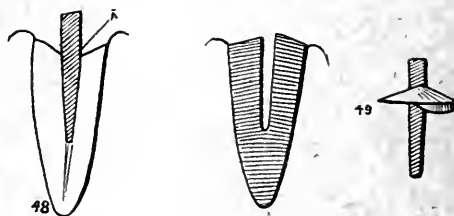


enlarged pulp canal, and still make the crown a perfect success. Whittle a piece of pine or orange wood to fit the enlarged canal, take No. 60 platinum and gold, or pure platinum foil, well annealed, and wrap it around the point of wood; place it into the canal upon the wood, and by using a little pressure, and at the same time twisting the wood around, the metal will conform to the exact shape of the canal. Now you have a cone that exactly fits (Fig. 46). Take a piece of iridio-platinum posting, largest size at hand, and place it into the centre of cone (Fig. 47). A hole is cut in the charcoal to receive the cone, and high-karat solder is flowed about the pin to fill up the cone. The base of the cone is kept flush with the face of the root, and the projecting platinum posting is required for the attachment.

To proceed with a detailed description of a typical case, root healthy, apical foramen filled, the face of the root shaped, and the canal enlarged. If one so prefers, an impression of the root-face

is taken in moldene and a Melotte's metal cast made, upon which the root-plate is swadged. This procedure is hardly necessary, and involves valuable time, that might have been spent to better advantage.

A piece of iridio-platinum wire is filed, tapering to snugly fit the enlarged canal, the length of which is marked on the posting. A small piece of well-annealed pure gold, No. 31, or soft platinum, No. 34 (B. & S. gauge), a little larger than the face of the root, is punched with a small hole in centre, through which is forced the platinum posting and soldered at the canal length on the posting. If the root-face is somewhat hollowed, and the peripheral edge of root is higher than the canal (Fig. 48), then mark the post at the point (Fig. 48 *a*) where it comes out of canal; this will carry the root-plate into the hollow, and admit of accurately fitting. The post and plate is now placed on the root, and by consistent burnishing and slight malleting at times, in removing it you will find the edge of the root definitely marked on under side of

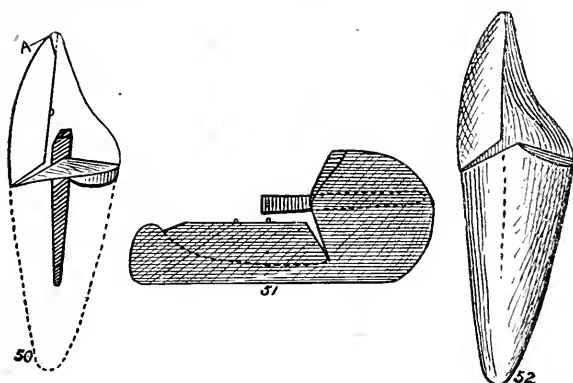


plate, which is trimmed off, leaving sufficient for a slight turn-over on the palatine half of root, which is formed by using a small-nosed pair of half-round pliers; the post and plate is again annealed and readjusted into position, and burnished again until an accurate fit is obtained (Fig. 49).

The swadging of the plate to the face of the root is often nicely accomplished by using a piece of pine roughened on the end so that impression compound will stay to it; a piece the size of a buckshot is warmed and placed on the wood and pressed over the face of the root, removed and cooled; this is now used to swadge the gold or platinum to the face of root; it is quick and effective. The post and plate in position on the natural tooth, a wax-bite is taken if necessary. Then a plaster impression is taken, in which are withdrawn the post and plate; if not withdrawn, it can be removed and adjusted in proper relation in the impression. The shade-tooth is selected at this time. If time of patient or operator is a consideration, then a temporary tooth is quickly adjusted, there being no excuse for a patient leaving the office disfigured by the absence of a tooth in the front of the

mouth; if only for twenty-four hours, the patient, if at all sensitive will be obliged to secret themselves in their private chambers. It is well to keep at hand a supply of Bonwell, Gates or Ash tube crowns; one is selected that fills the space, little attention being paid to shade; a few cuts with a carborundum will approximately fit it. A screw-post of proper length is placed into the prepared canal, a slot cut across it to provide for its easy removal,—temporary stopping is used as an intermediate to retain it in position. The pins of a cross-pin plate-tooth can be bent around the screw-post (if Bonwell's not at hand) and the palatine portion filled in with cement. The impression can be run off with investment material if one desires to solder on cast, but if pure plaster be used the post and plate must be withdrawn while soldering.

A plain, straight-pin tooth, having shape, size and color cor-



responding with the adjoining tooth, is then selected. I mention straight-pin tooth as being stronger than cross-pin; but if the bite is short, the lower pin might be ground out in fitting, therefore a cross-pin would be called upon.

The post can be ground or cut off so that it will not interfere with the proper situation of the porcelain face (Fig. 50), the cervical portion fitting perfectly to the outer edge of the plate, the cutting edge on a line with its fellow, and restoring the general contour.

Bevel the palatal aspect from about one-eighth of an inch beneath the cutting edge, at point *a*, Fig. 50. The shade of the tooth can be changed by the backing, so if too blue use pure gold, or if too yellow, use platinum as a backing. To obtain a close adaptation of the backing, a well-annealed piece of pure gold or platinum, No. 35 or 36, B. & S., is used as backing, lining the full palatal surface of the porcelain from the extreme biting edge to

the extreme cervical; over this thin backing plate of No. 28 to 30 gauge is used, but does not extend beyond the angles of the palatal surface. A check in the porcelain is often avoided by this double backing, with a neater and closer union of porcelain and gold.

The porcelain is now held into position with adhesive wax, and withdrawn from cast and invested, or invested in the cast, as the case may be, the former having the preference, as a minute investment can be made, checking of porcelain being a point worthy of consideration. A single tooth investment should appear as Fig. 51.

When the investment material has set, remove the wax; apply borax; cover the surface with small pieces of 20-karat solder; dry out thoroughly; then heat slowly from the investment side; when the tooth shows red by heat transmitted through the investment, turn the fine blow-pipe flame on the plate and backing, and the soldering will be perfect. Cool gradually by placing some asbestos fibre over the investment. If in a rush, it can be cooled in one minute without the slightest fear of a check, by throwing the tooth with investment into a tin of water in the act of boiling, removing it from the stove, and let a small jet from the cold water tap run into the tin, increasing the flow gradually as the water tempers. This method is safe and quick. When finished, the outlines of the crown should be in exact correspondence with the outlines of the root (Fig. 52).

(To be continued.)

THE ADMINISTRATION OF NITROUS OXIDE.

BY THOMAS HENDERSON, TORONTO.

Read before the Toronto Dental Society.

In the administration of nitrous oxide gas the operator should be self-possessed and have entire confidence in his skill, so as to meet all inquiries from patients with intelligent, practical answers, inspiring faith in the anesthetic. If possible, get the full confidence of the patient. The operator should allow nothing to distract his attention from his patient while administering the anesthetic, and if any alarming symptoms should occur the patient should have immediate attention. To be successful in the administration of nitrous oxide, next to pure gas, you must have a perfect-working apparatus. Do not try to administer gas if your apparatus is imperfect, for you may be assured the

result will be embarrassing to you, and your patient. The tube on the gas apparatus and the inhaler must be large enough to admit a free flow of gas, so that nervous patients, as well as those of weak lungs can breathe through it without the least exertion. The valves should be close to the mouth and be made light and without springs, so that they will open and close with the slightest pressure in respiration. In my opinion there is no inhaler as nearly universal and perfect as the inflatable; owing to its flexibility it can be adjusted to any person's face.

Be sure that your tubing and inhaler does not leak air. A gasometer is good, but if you have not got one I think there is no way so handy as to have your gas apparatus attached to a bracket, so that it can be swung easily to or from side of chair. The gas-receiver must be so sensitive as to respond to the least possible respiration, and it must continue throughout the entire operation. There must be no hindrance whatever, and especially when the patient becomes partly stupefied, the least hitch or any abnormal labor of the lungs will stop them then and there, and the effect will be incomplete. The patient must not be crowded in the least, nor must he be expected to labor in obtaining the gas. The receiver should stop with the least pressure of the breath, and start its downward march at each inhalation, without effort from the patient. By using such an apparatus as I have described, the operator may feel that half the battle is won; then by using pure gas, and following the rules I shall endeavor to give, the operator may not expect to see many of the alarming symptoms that rise, nor have his patients drift off into dreams of the most frightful character. I am led to believe that fully two-thirds of the alarming symptoms that have been recorded can be directly traced to improper administration.

Well, then, in what cases would you reject in the administration of gas? In my own experience, I hardly ever refuse to give gas to any, yet I would advise caution in the following cases: Habitual intemperate people; diseases of the heart, lungs, brain and kidneys; St. Vitus' dance, epilepsy, debilitated dyspeptics, people in an intoxicated condition; very old and very young people.

The following are some of the precautions necessary to secure best results: Let the patient occupy an upright position in the chair, comfortable to himself and favorable to the operator. Lessen every burden to the physical force by loosening clothing if tight; removal of artificial teeth, if any. Always be ready for an emergency, and have at hand all accessories, such as tongue forceps, small napkins, nitrite of amyl, aromatic spirits of ammonia, and all instruments needed for the operation. The

less the display of instruments the better. Patient's friend not too near the chair during the operation. If assistants be present, it would be as well for them to stay in an adjoining room. Examine the mouth, thoroughly acquainting yourself with the work you have to do, taking a mental note of the teeth to be extracted, their order, and the instruments to be used in each case. Before beginning the administration, endeavor to calm any fears the patient may have, explaining to him, the pleasant experiences he may have during inhalation, but after the administration is commenced I advise silence, except perhaps a few words from the operator. Have on hand a number of props of various sizes. They should be strong and indestructible, easy to clean, and constructed in such a way, as not to slip when in the mouth. Corks should be avoided. Place the prop in the mouth in such a position as to be as little in the way as possible during the operation. Allow the patient a small quantity of water to moisten the throat and mouth, as the salivary glands may be inactive while the patient is laboring under the excitement of an operation. All things being ready, adapt the face-piece so as not to admit any air, and instruct the patient to breathe naturally, but do not admit the gas till after a few quiet, normal respirations. By doing so, there is scarcely ever any trouble after the patient commences to inhale the gas. It sometimes happens, however, that the patient, when beginning to take the gas, grows red in the face and makes labored movements of the chest, forcibly removing the inhaler from the face and complains of suffocation. This may be caused by involuntary closing of the larynx through fear or lack of confidence. Try and restore confidence in patient, when a second trial may work satisfactorily. Should the patient offer resistance, he should be quietly cautioned to keep quiet and assured that all is well. If this does not avail, it is better to cease administration and let patient recover. Force should not be used at this stage, as it only terrifies the patient. If such movements should occur when consciousness is gone, then he should be restrained and the administration pushed to completion.

The effect of the gas on the patient is generally as follows: First, there is dizziness and noise, followed by intoxication, a tingling sensation extending to the extremities and fulness of the chest, followed by insensibility to pain, though perhaps consciousness is retained. It is important to remember that we may be conscious and yet not be susceptible to pain. Under favorable conditions the character of the respirations will be the same till near complete anesthesia, when the breathing will generally become more rapid, followed by spasmodic or jerky inhalations

similar to snoring or natural sleep. The natural color of the countenance will generally give way to palor. Muscular twitching of the extremities is frequently noticed as the anesthetic state is approached. The diagnostic indications of complete anesthesia then are: (1) lividity of eyelids and lips; (2) when snoring becomes marked. Be sure and get your patient sufficiently under control before operating. The surgical period being reached, grasp the necessary forceps and commence extracting with a firm and determined nerve, losing no time. A bowl and sponge should be within reach, and as soon as the teeth are extracted the head of the patient should be inclined forward, so that the blood will not run down the throat. As soon as possible let the patient inhale ammonia, which not only stimulates the nerve of the nasal membrane, but it will neutralize the carbonic acid in the air-cells of the lungs.

Nausea or vomiting may follow in cases of patients in debilitated, bilious, or dyspeptic conditions, but in such cases the administration of a small quantity of a stimulant or fresh air will be all that may be necessary.

If any alarming symptoms should occur, such as stopping of breathing or loss of pulse, the operator must not lose his balance, but proceed at once with all known means of restoration. If the breathing ceases, thrust the forefinger low down into the throat and draw the tongue forward and hold it. This will exact some motion of the throat and mouth, and this may be all that is necessary. If this should fail, then slapping the chest with the hand, or holding a wet cloth to the face, applying ammonia to the nostrils, or the vapor of amyl nitrite, elevating the limbs and rubbing the extremities toward the body; also raise the feet and lower part of the body higher than the head. Expand the chest by pressing the sides, and thus induce breathing if possible. Apply the battery and work vigorously, for time is precious.

I am often asked, When would you recommend nitrous oxide? I might say that, when there is sufficient vitality to bear the shock of extraction without the aid of an anesthetic, it is better, or less dangerous, to administer the gas than to operate without it. When I can take a patient, old or young, who comes to my office free from liquor and self-possessed and composed, and confident that they are not going to be hurt, and give them gas without any struggle and pain, and when I see them within ten minutes go about their business as though nothing had happened, and when I see this day after day and year after year, I cannot refrain from the belief that nitrous oxide has a legitimate place in dentistry.

THE IDEAL CROWN.

BY G. M. TREWIN, D.D.S.

As early as the fifth century, B.C., artificial replacement of the crowns of teeth was practised, for Cascellius, a Roman dentist of that period, is spoken of by an early poet as being able to "fasten" as well as extract teeth. Progress and improvement in this work has up to the present gone on, till now we have what we believe an almost ideal method of crown replacement—the porcelain baked crown—and by its use we may save our patients from being placed among those people termed by the DOMINION DENTAL JOURNAL, "of questionable character."

Appearance, function and preservation of remaining tooth-tissue should all be included in the restoration of a crown on a root. We can best obtain these in the porcelain baked crown with cap and post, for it has the advantages of natural appearance and cleanliness; it can be properly contoured so as to make perfectly normal points of contact—the band protecting the root and hermetically sealing it if properly fitted, while with all these it has, at the same time, strength and simplicity of construction.

To obtain the best results with this form of crown, there are five essential points :

(1) Fit. (2) Occlusion. (3) Strength. (4) Approximal Contact. (5) Esthetic Appearance.

Now, the nature of porcelain being mineral and friable, its strength therefore increasing in proportion to its bulk, the use of this crown is contra-indicated in "close bite," where enough porcelain cannot be used to secure strength.

The ten anterior teeth are indicated for this method of crown restoration, especially the bicusps, for by its use the display of gold cusps and the all-gold crown is avoided. It is also very applicable in those cases where reproduction of gum is necessary.

No metal backing being used, the translucency of the facing is not affected; no dirty joints occur, as where facing and metal meet, therefore perfect cleanliness, and there is but little danger of the facing breaking away, for whereas, in a metal-backed crown the facing is held only by the pins, in the porcelain baked crown the facing is not only held by the pins, but by the fusing of the porcelain body with the facing as well.

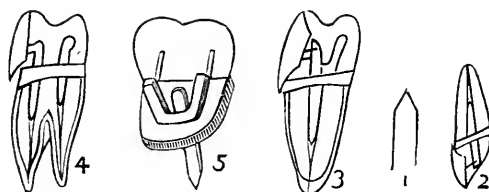
The construction of this crown is as follows: The crown is cut off about 1-16 of an inch from the gum margin, the enamel scraped off, measurement taken, and a band of pure platinum (28-gauge) soldered and fitted, pure gold being used as solder, or

platinum solder may be used. If pure gold be used, the band must be made with a lap-joint, for if simply butted it will separate in baking, from expansion. Place the band, fitted perfectly to the root and festooned to fit gum margin, in position, and grind both band and root down together below the gum margin, grinding it square across. Next burnish a piece of 32-gauge platinum to this plane surface to form floor, and solder this floor to the band.

Next fit the post in the root canal, enlarging the canal as little as possible, using posting for centrals, cuspids and molars of 16-gauge B. & S., and for bicuspid and laterals 18-gauge of iridio-platinum, on account of its strength and rigidity.

The post should be square or triangular, as this form is most rigid and will not rotate in the canal. It should not be tapered, but of the same size throughout, probably pointed slightly at the end (see Fig. 1), and should, to overcome leverage, be extended into the root a distance equal to the length of the crown, with also a considerable free end.

Having fitted the post into the root-canal again place on the



cap, and locating the position of the canal opening, drive the pointed end of the pin through the floor to position in the root, thus procuring adaptation of floor with sides of post.

Remove cap and post together by forcing a piece of heated gutta-percha against them, letting cool and withdrawing (should they not come away readily, they can be removed with pliers and placed in proper relation in this gutta-percha impression). Flow a little plaster around pin and in cap, thus holding them in position; remove gutta-percha and solder cap to post, then again place cap with post in position; take a bite first, and then an impression of these in mouth, and articulate, placing a little wax above post and in cap so it can be heated and easily removed from model.

Having selected a suitable facing, which should tend to be dark on account of sometimes bleaching slightly in baking, grind it very thin at the neck, so that it will project a little over the band (see Fig. 2), so that porcelain may be baked over band and anchored there, thus preventing the show of metal should recession take place.

Next the pins of the facing should be brought in perfect con-

tact with projecting end of the post, or bent down in contact with the floor of the cap. Invest and solder so as to combine the strength of the porcelain and the fastening of the facing to the cap.

In bicuspsids, an additional support for the lingual cusp is necessary, which is supplied by a vertical bar soldered to lingual portion of cap (see Fig. 3), or in double-rooted bicuspsids a post may be placed in the lingual root-canal (see Fig. 4).

The ends and edges of these supports must be rounded, or the porcelain will not adapt itself to them. They then would form wedges to weaken the crown. As small a quantity of solder as possible to secure parts should be used, else porosity in baking may occur, and no borax whatever is necessary, since neither pure gold nor platinum oxidize under the blow-pipe flame used.

After soldering, all sharp angles, points and edges should be disked smooth and rounded, the crown placed in an acid bath, and washed perfectly clean. It is then ready for the body. The best body for this work is the ordinary continuous gum body, which, however, is too coarse. It should, therefore, be ground fine in a mortar, after which it will work nicely.

Place the crown in a pin-vice, and remembering that extreme cleanliness is essential, mix the body to proper manipulative consistency. Now commence to build up crown, absorbing excess moisture with bibulous paper till crown is built up a little larger than necessary. Then dry the mass till it cuts like putty, at which stage the dentist may display his skill as a sculptor, carving the mass to desired form and contour. Having obtained this, give it the first bake, partially vitrifying or biscuiting it.

At the second bake, have crown of desired form, contour and articulation, and bake to a point of perfect vitrification. Allow to cool gradually, and the crown is completed, ready for mounting.

Now the molar crown, which is illustrated in Fig. 5, is of value in those cases where the crown is ground or made very short, for a narrow band may be made and additional support obtained by a post, consideration of the bite being necessary for its use in molars, however. In upper molars, this post should be placed in the lingual root; in lower molars in the distal root. As regards mounting, gutta-percha, barring its difficult manipulation, is best, for it acts as a cushion, it is insoluble in the fluids of the mouth, and is easily removed if necessary. In the use of cement, the pin should be slightly coated with shellac, or chloro-percha, which renders it more easy in removal.

VACCINATION A PRIME FACTOR IN THE DESTRUCTION OF CHILDREN'S TEETH.

BY D. V. BEACOCK, BROCKVILLE, ONT.

During the late smallpox scare, I was reluctantly drawn into a newspaper controversy on vaccination. In one of my letters, I incidentally stated that, during a practice of over thirty years, I had noted, with feelings of sorrow, the terrible destruction that was going on with our children's teeth, and that several prominent dentists had stated that if this state of things continue, we bid fair to become an edentulous people; that I was led to believe that vaccination might possibly be an important factor in the case. My remarks were not only treated as quixotic, but absolutely untenable, and unsupported by any testimony whatever. Later and more searching investigation has served to strengthen the conviction that vaccination is a subject that should be thoroughly investigated and discussed by dentists, as it may not only be found to be an important, but a prime factor in the loss of children's teeth.

It is a well-known fact that children vaccinated during dentition, frequently suffer from diarrheal complaints, and the tooth-making process is interfered with, consequently the teeth are imperfectly developed and subject to decay. Any expert dentist can tell at a glance by the condition of the teeth of any boy or girl whether and when there was sickness in childhood. For instance, any nutritional disturbances occurring prior to the fifth year, the defect would be observed upon the incisors and first molar crowns, varying, of course, in location with the age and advancement of calcification. If prior to the seventh and after the third year, it would be seen on the crowns of the cuspids, bicuspid, and second molars; occurring between the eighth and twelfth years, it would probably produce some malformation of the third molars. This influence of general health upon the teeth, inducing vices of conformation, may be assigned as a very important factor, favoring the premature loss of the third molar or wisdom teeth. Development in it proceeds or is protracted through a period of childhood when the system is so liable to frequent and prolonged attacks of malnutrition, caused by vaccination and infantile diseases, which must unavoidably interfere with perfect calcification.

Now, after more than a third of a century's experience, I have no hesitation in saying it is my firm conviction that one of the greatest causes which produce decay in children's teeth, so characteristic of both Canadians and Americans, may be referred to

vaccination, inflicted in early childhood by the vaccinator. It is well known that "vaccinia," by combining with latent syphilis, scrofula, etc., may, and often does, occasion an excessive disturbance and disease which often affects the teeth permanently. We need not wonder at this, only think how sensitive to pathological disturbances the hyper-sensitive tooth-germs are in childhood; and any nutritional derangement such as vaccination, or any infantile disease, will derange its functions. That these diseases do pervert nutrition or injure formative organs, and thus disturb the formation of the teeth, we are only too well aware; perversion of nutrition, either by the pabulum being filled with poison of the disease, or with the diseased products, or through its insufficiency, is a very potent cause, the effect of the disease-poison upon the formative organ causing death or rupture of the ameloblasts or odontoblasts, thus giving rise to defective places in the enamel or dentine, and may result in the final destruction of the organ. Congenital lesion of the teeth, fissures, erosions, etc., are exclusively due to disturbances of the dentinification, and belong to the history of the follicular evolution.

Dr. A. Carter, dentist, London, England, suggests that vaccination itself may be at the bottom of the defective dental organizations so prevalent where European physicians practise and nowhere else. A bovine disease is introduced into the blood of the infant, and during the early stages of dental formation, causing that defective development from which the present generation so generally suffers."

If intestinal disturbances, which frequently occur during dentition, as well as those arising from other causes, often produce grave alterations in the forms or quality of the teeth, why should vaccination not produce the gravest results, seeing that its effect upon our children sometimes lasts for weeks and months, and very often causes death? In the city of London alone no less than two hundred children die annually from vaccination.

Dr. Sylvester Graham, in his celebrated work, the "Science of Life," wrote: "Everything unfriendly to the sound constitution and permanent health of the teeth, is far more efficacious in its pernicious effects on these organs in childhood, than in the later periods of life. Indeed, there is no period in which the teeth are so deeply and permanently injured as they are previous to their eruption above the gums. From the time their germs begin to be developed until the teeth are completely formed, or during the progress of the second dentition, every disturbance (to wit, the poison of vaccine) in the organic domain, strikes at the very constitution of the teeth, and does them an irreparable injury, preparing them for early disease and decay."

The teeth are so intimately related to the nervous system in origin and sympathy, that many nervous disturbances in childhood affect the tooth-germs and derange its functions. In the study of this subject, we must consider the close anatomical relationship existing between the teeth and the nervous system. The sympathy and responsiveness existing between them are intense and wonderful, and would be utterly incomprehensible did we not carefully consider this; and in the matter of effecting perversion of nutrition of the teeth during development, nervous excesses and excitability, or hyperesthesia, is a prime factor.

The teeth are a part, and an exquisitely organized part, of the animal economy. They must, therefore, be more or less influenced by the state of the general health. They are liable to considerable modification of their texture by varying constitutional conditions. Excessive mental or emotional activity impairs digestion, and it diverts nutrition to the brain to repair undue waste, and from lack of this nutrition the teeth become degraded, and thus fall an easy prey to the aggressive agencies by the same disordered and defective assimilation.

A teething child should have more than usual hygienic care, more than usual freedom from all avoidable disturbing influences, for whatever tends, by modifying the general health unfavorably, to lower the resisting power of the organism, may readily convert the natural and otherwise easy course of dentition into one of great pain and even danger. There is undoubtedly, during the period of dentition an increased susceptibility to nervous and digestive troubles, requiring more than ordinary care and watchfulness on the part of the mother. Causes which at other times might have no appreciable effect, may then be productive of very great danger. In fact, anything which introduces inharmony into the functions of animal life, at this early period, may result in a disturbance of the process of dentition.

We find Dr. White, Philadelphia, writing in the *Dental Cosmos*, January, 1887: "It will not, I think, be denied, by any observing practitioner whose observation embraces representatives of three or four generations, that from the great-grandparents to their children and their children's children, there is a general continuous deterioration in the quality of the dental outfit, through the successive generations. All the facts of professional experience which have been gathered, all improved modes of practice which the best heads and hearts have thus far developed have not sufficed to stem the tide which seems destined to render the human race edentulous—that is, toothless."

Surely this is an alarming state of affairs. How is it that this terrible affliction has been forced upon us only within the

present century?—in other words, since vaccination was introduced. Has not some law of God and Nature been violated, to bring upon our children such a dreadful affliction.

The sins of the fathers are visited upon the children with a vengeance, which is as precise as it is merciless. In the study of this all-important subject, we should ever keep in view this fact, that for nearly one hundred years the blood of nearly all our ancestors was inoculated with the virus of smallpox, and to our shame be it said, was as highly recommended by physicians as vaccination is to-day, and there is little doubt that most, if not all of us, through inheritance, have the germs of this foul and loathsome disease, in an attenuated form, it having been filtered through several generations, lying latent in our system, ready to be aroused into action on the first favorable opportunity, as we too often see when persons are vaccinated during a smallpox scare, they being invariably the first in every epidemic to catch smallpox. Let us hope that in this more enlightened age, our medical brethren may be induced to open their eyes to this alarming state of affairs, and aid by all means in their power to stem the torrent of this destructive avalanche which threatens to overwhelm our race.

Dr. A. Carter, who, in company with his father, a noted physician, travelled all over the world, made it his business to investigate this subject. He discovered that in the Punjab and North-Western Provinces, both in the plains and mountains, that all the people, whether Hindoos, Sikhs, Punjabees, Afghans or Ghoorkas, are provided with splendid teeth, and as a rule only lose them from old age; and throughout the whole length and breadth of the Indian Peninsula he never saw anyone suffering from dental decay, except those who had unfortunately been subjected to the cowpoxing process. Again, in Ceylon, he found that while the native Singalese had nothing to complain of in their teeth, the young people of European parentage who had been vaccinated were suffering dreadfully. In Burmah also he found the very small population who had been vaccinated very generally suffering from dental decay. It was the same in Australia. The Chinese who settle in large numbers in the Straits Settlements under the British Government, and in Java and in other islands under the Dutch, often marry Malay women having sound teeth, and their children have sound teeth; but in Singapore and Penang the well-to-do part of them follow the example of their European neighbors, and have their children vaccinated, and those children grow up to be men and women with teeth as decayed as any people in the world.

From the above it appears that vaccination is accompanied in

all parts of the world by defective teeth; can any reasonable person doubt that it must, in some way, be the cause? In considering the effects of vaccination on the teeth, no fact is better established by physiologists, than the severe constitutional derangement in early childhood leaves its indelible mark upon the teeth, and the child's health is affected by it just when the germs of the permanent teeth are undergoing their earliest formation. No one knows what change takes place in the character of the disease, "variola vaccinia," when transferred from the bovine into the human circulation, but it is known that when vaccine virus or lymph is introduced into sheep, it involves a disease of which the animal wastes away and dies. Can any one tell what may be the consequences of introducing "lues bovilla," a bestial humor out of a diseased calf, into the human circulation after a long lapse of years? The relation between cause and effect may, and no doubt is, lost sight of. The vaccination of a healthy person is nothing less than the implanting of a noxious element in the body. The success of the operation consists in producing of actual disease, in bringing about a permanent, unnatural and morbid condition. The person thus contaminated will seldom, if ever, regain the former integrity of body, but on the contrary, made liable to a variety of ailments. Such compulsion to contract disease is an outrage analagous in its torpitude to enforced debauchery; and what makes it much worse, young children are the principal sufferers from such violation. They cannot resist, and those having charge of them are often unable or too ignorant to do so. They are thus made subject to the dreadful, evil results all their lives. For example, every fever or other illness that an infant undergoes leaves its sequelæ behind. Therefore, we may feel certain that a great cause of the decay of teeth may be referred to the disease "vaccinia" inflicted in early life by the vaccinator. Besides, think of the multiplex eruptive diseases, the tortuous eczemas, and their associates, which so invariably follow and make life a terrible burden.

(To be continued.)

"EXTENSION FOR PREVENTION."

BY W. S. ROSE, SCHENECTADY, N.Y.

Read before the Sixth, Seventh, and Eighth District Dental Societies of New York, as part of the discussion of Dr. Palmer's paper.

"Extension for Prevention" is the hobby now we ride,
We found it in Chicago, Black's and Johnson's growing pride;
But it quickly ambled north and south and to our eastern shore
Till it dispossessed the microbes, and our fillings fail no more.

We've the kathodynamometer, that shows the biting stress
Exactly to the pennyweight, eliminating guess;
We have scales to weigh our mercury, and instruments to show
No contraction, slight expansion, and how much amalgams flow.

Much is due our western confreres,—Wedelstaedt has pointed out
That the author of our "Items" gropes in scientific doubt;
That the snows of forty winters lie up-piled upon his skill,
That to tools he is a stranger, and his methods fraught with ill.

That a live and modern dentist touched with western skill and lore
Cannot fail to make a filling good for eighty years or more;
He extends the fickle borders till they're all in open sight,
All except that 'neath the septum, which he's sure is water-tight.

And with magic hoe and chisel he'll displace the ugly bone
Quicker far and with less effort than it could be left alone;
And he'll fill the larger opening, trim and polish to surprise
In less time and for less money than if it were half the size.

Then our lady's first bicuspid is a tooth of beauty rare,
With the sunrise on its mesial side and sunset in the rear;
Clasped effulgent in occlusion, decked in double-dovetailed sheen,
Glittering golden round the corners, with a strip of white between.

Strip of white, aesthetic blemish, just a hint of nature plain,
Left to work upon his conscience, and suggest a "date" again;
Harsh attrition, mundane duty, will in time efface this blot,
Then he'll revel in his glory, place a gold forget-me-not.

And the pale though sound incisors pities he with artist's eye,
Mends their lustre with his fillings, thwarting failure by and by;
Thus excelling their Creator both in shade and sides immune,
Blessings on our western brother, to humanity a boon.

So our colleagues have revived us and have made us up to date,
Where our fillings lasted forty years, they now last forty-eight;
We are expert in prognosis, for a decade clearly proves
That the wedge and prism anchorage far surpasses wedge and
grooves.

But the star whose zenith proudly once proclaimed the East's
renown

Hath departed in the glory of the radiant western sun,
Where with splendor grandly glorious symbols he with shafts of
gold

Golden work by golden dentists, passport to the streets of gold.

Proceedings of Dental Societies

OFFICERS OF THE ROYAL DENTAL SOCIETY, 1901.

Hon. President	-	-	-	Dr. Harold Clark.
President	-	-	-	A. D. A. Mason, D.D.S.
Vice-President	-	-	-	W. E. Cummer.
Secretary	-	-	-	A. E. Shaver, D.D.S.
Representative from Jun. Class	-	-	-	W. C. Davy.
First Councillor	-	-	-	V. LeR. Heath.
Second Councillor	-	-	-	C. C. Nash.

ROYAL DENTAL SOCIETY.

The first meeting of the Royal Dental Society was held in the large lecture room of the College on Thursday evening, November 14th, 1901, at eight o'clock.

Dr. Mason, the President, made a few very appropriate remarks, in which he briefly stated the aims and objects of the Royal Dental Society. He outlined the plans the Committee purposed following during the term.

Mr. W. E. Cummer gave a piano solo, which was heartily enjoyed by all, and was an ample manifestation of Mr. Cummer's musical talent.

Dr. G. M. Trewin then gave a paper on "The Ideal Crown" (see page 464).

Mr. J. M. Jones opened the discussion by saying that Dr. Trewin had so completely taken up the advantages and construction of the porcelain baked crown, and besides, Dr. Trewin's ideas were so much in accord with his own that he had but little to add. However, there were a few points in which he did not altogether agree with him. First, Dr. Trewin stated that when soldering the platinum band with pure gold a lap-joint was necessary, on the ground of expansion. Mr. Jones asked the following question: "Why will expansion break this joint?" Secondly, Does not a lingual support in bicuspid weaken instead of strengthen the crown? Thirdly, What advantage is gained in grinding the root straight across, also in complete banding of the root?

Dr. Trewin, in reply, stated that the amount of pure gold used in soldering is a minimum amount in proportion to the amount of platinum in the band, and the expansion which takes place before

contraction would cause the joint to separate, there not being enough gold to expand to the same degree to which the platinum will expand ; and besides, the platinum is more tenacious than gold, being fourth, while gold is sixth, in the table for tenacity of metals, and besides the adherence of gold to platinum under the ordinary blow-pipe flame is slight in comparison to gold solder with gold. Secondly, If a bicuspid made without a lingual support be subjected to a strain, as the force of cleavage in the bite, the lingual cusps being unsupported is very liable to break off. While, if this lingual support be nicely rounded and smoothed, the porcelain will adapt itself to it perfectly, thus giving more strength to the crown than a mass of friable porcelain alone would have. Thirdly, Advantages of banding root completely ; (1) Porcelain may be baked over band, so that in case of recession of the gum no metal will show, and besides, the tissues will tolerate smooth porcelain. (2) The root is hermetically sealed by a tight-fitting band, leaving no joint for lodgment of secretions, etc. (3) The root is protected from fracture. (4) The stability of the crown is greatly increased. Fourthly, "Why cut root straight across?" Because the lingual portion of root, being ground shorter, a greater amount of porcelain may be added to lingual cusp, and in this way strengthen it.

The discussion on Dr. Trewin's paper was now, necessarily, brought to a close, as the hour had arrived for the next item on the programme.

Dr. R. A. Reeve, Dean of Toronto Medical Faculty, was then introduced.

Dr. Reeve gave us a practical and very interesting talk on "Care of the Eye." He made use of a series of lantern slides, which magnificently demonstrated his remarks. By way of introduction, he spoke of the difference in public opinion, with regard to placing a glass in front of the eye. Previously, the age of the patient was taken as a guide, but this idea has proven itself absurd. He then stated that the majority of eyes are not normal, and that our occupation brought out the weak points. Chronic redness or inflammation at edges of eyelids is due to muscular weakness producing irritation, as the muscles of the eye are not properly balanced.

Pain, above the eye or at the occipit, inflammation of eye-lids, or conjunctiva or cornea, or probably elevation of epithelium in cornea of the eye, also reflex neuralgia and certain forms of indigestion, are all indications of some eye trouble. Some extreme cases, such as epilepsy, St. Vitus' dance, and certain renal diseases have been known to have a similar origin.

Medicines have an effect up to a certain stage, but a suitable pair of lenses are necessary.

He then dealt briefly with the anatomy of the eye, stating that the normal or perfect eye should be about one inch in diameter ; but in the case of infants and children the eye is somewhat shallow, being shorter from front to back. However, it is expected to grow, which it does not always do, and thus produces short-sightedness. At the age of twenty this eye, which is quite common, can see objects distinctly, but requires a greater strain on the muscles. The short-sighted eye, he remarked, is becoming quite common, especially in large cities, and is exceptionally prevalent in Germany. This short-sightedness, or myopia, is hereditary, or it may be caused in many cases by the use of poor, small type or poor paper ; in small, dark school-rooms, making it necessary to bring the object close, and producing a tendency to squeeze and elongate the eye. The blur, which is so often experienced, is also due to myopia.

He then spoke of stigmatism, a condition of the eye which renders it impossible for things on the horizontal and perpendicular to be seen distinctly at the same time; either one or the other will be blurred.

Children who "squint" generally have one defective eye. The anatomy of the eye is such that any change or injury, if not too severe, is distributed to both eyes instead of one. He also mentioned the fact that the use of tobacco in a few cases has been known to have an injurious effect on the optic nerve.

POINTERS.

1. Muscles of the eye need to be properly balanced.
2. Cutting of muscle or muscles to produce this is not good practice.
3. Tobacco smoke in room is injurious to the eye.
4. Do not read while lying in bed.
5. The eyes should be directed at a point 35 degrees below the level.
6. Light should never be direct, but reflected; but there should be no cross reflections.
7. The study room should not be perfectly dark, allowing too much light to be thrown on the table.
8. For studying, a coal-oil lamp, with a shade, is preferable to all others.
9. Never use a flickering gas light.
10. Any light used should be clear and steady.
11. If glasses are used, they should be so placed that we can look at right angles through the centre.

12. Weak convex lenses are best for people who require to get their work near the eye.

13. Sensitiveness to light is simply a result of eye-strain.

14. A segment at bottom of lens is necessary for the dentist who finds that his eyes becomes tired.

Dr. J. B. Willmott, Dean, then followed with a few appropriate remarks, in which he expressed himself as being heartily in accord with the lecturer's remarks, and before taking his seat he conveyed to Dr. Reeve the hearty thanks of those present for his most interesting and instructive discourse.

Mr. V. L. Heath then favored us with a vocal solo, which was very enthusiastically received.

The meeting then closed with the National Anthem.

A. E. SHAVER, Sec. R.D.S.

TORONTO DENTAL SOCIETY.

Dr. Henderson read a paper on the "Administration of Nitrous Oxide Gas," before the Society, November 12th, 1901. (See page 460.)

DISCUSSION.

Dr. Sparrow said that he had found a few cases where the gas seemed to excite a muscular spasm, and an apparent cessation of respiration. In such cases he was at a loss to know what is best to do.

Dr. Price could see no objection to giving gas to children, and said he was surprised that nothing was said in the paper with reference to the administration of oxygen with the nitrous oxide gas. His practice was to give an occasional breath of air during the administration.

Dr. Greive gives some air during the administration, and thinks by so doing the effect of the anesthetic is prolonged.

Dr. Mallory, sen., said that he had given gas several thousand times, and never used any other prop than a cork, and could see no objection to it.

Dr. Reade asked the essayist if he advised mixing chloroform with the gas to prolong the effect.

Dr. Webster said that some years ago it was believed that nitrous oxide gas produced anesthesia by asphyxiation, or lack of oxygen; this notion sprang from the marked cyanosis seen in some cases. When the gas is administered slowly, and no air is admitted, asphyxiation really occurs before enough of the anes-

thetic has entered the circulation to produce its effect. The most recent investigations, however, show that nitrous oxide gas is a true anesthetic, but in order to get its effect, and it only, it must be given rapidly, asking the patient to breathe good, deep, full, free breaths, getting all the anesthetic possible into the circulation as rapidly as possible.

Dr. Lennox always asks the patient to keep his fingers moving, and when this stops the patient has enough anesthetic. In many cases the patient is semi-conscious, but insensible to pain, in such cases too much air is being admitted. He tells his patient to breathe out well, which will usually ensure a good inspiration.

Dr. Henderson, in closing the discussion, said that the muscular spasms and cessation of respiration are usually due to impure gas, or some leakage of air in the apparatus or around the hood, as so often occurs in men with whiskers. He said that he used to mix chloroform with gas, but believed it unwise to mix anesthetics. The danger in using a cork as a prop is that pieces might break off and pass into the air passages. There is no objection to giving gas to young children if they can be induced to take it. The gas should be given quietly and without air, having a good, free-working apparatus.

ONTARIO DENTAL SOCIETY MEETING.

In the last two editions of the DOMINION DENTAL JOURNAL have appeared several references to the Ontario Dental Society: "Has vanished like the mist of the morning," "apparently defunct," "defunct," etc. If any of the readers of the JOURNAL had attended a recent meeting of the Programme Committee they would realize that the Society is very far from being in any of these conditions. The Executive Committee and the Programme Committee are quite alive to the importance of having a grand gathering in February. Much thought and hard work is being expended in preparing for the best meeting in the history of the Society. In the January issue the programme will appear more in detail than is possible at this early date. In brief, the plan of the meeting will be:

Tuesday, February 17th, 2 p.m.—Signing of roll and payment of fees, followed by an interesting paper by Dr. A. W. Harlan, of Chicago, and discussion.

Tuesday, February 17th, 8 p.m.—Paper by Dr. Noyes, of Chicago, on "Treatment of Enamel Margins from Histological

Standpoint," illustrated with lantern slides ; possibly another paper and discussion.

Wednesday, 18th, 9.30 a.m.—Two papers and discussion ; report of Committee on New Constitution, and Nomination of Officers.

Wednesday, 2 p.m.—Election of Officers, two papers and discussion.

Wednesday, 8 p.m.—A Reunion of Ontario Dentists at a Banquet. The Toronto Dental Society will join with the officers of the Ontario Society to make this a most enjoyable gathering of Ontario practitioners.

Thursday, February 19th, 9 a.m.—A large number of clinics will be presented by members of the profession in Ontario, and also by some from the neighboring Republic.

No progressive dentist can afford to miss this gathering.

A new and interesting feature in connection with the Convention has been undertaken by the Programme Committee. It is a collection of exhibits of models, casts, cases, specimens, abnormalities and curios, as prepared and arranged by dentists throughout the Province. These will be placed in and displayed from show-cases in charge of competent attendants.

As examples of contributions the following may be mentioned :

1. Vulcanite Work.
2. Varieties of Clasps.
3. Swaged Metal Dentures.
4. Cast Metal Dentures.
5. Ideal Settings of Artificial Teeth.
6. Methods of Restoring Facial Contours in Artificial Dentures.
7. Collections of Old or Used Dentures, Crowns, Bridges and Appliances.
8. Samples of the Condit System and Modifications.
9. Varieties of Crowns.
10. Samples of Bridge-Work.
11. Porcelain Work.
12. Orthodontia Casts, Models, Appliances, Tools and Materials.
13. Photographs and Skiagraphs.
14. Dental Cards and Stationery.
15. Collections of Extracted Teeth.
16. Samples of Fillings of Different Materials.
17. Root-Canal Fillings from Experimental and Clinical Cases.

18. Instruments.

19. Tools.

20. Materials.

The above general list will at once suggest an attraction to every one in (or even out of) the profession, that will both entertain and instruct, well rewarding considerable time spent in inspection.

Every dentist is invited to offer contributions toward this Dental Art Loan Exhibition. Each contributor is requested to prepare cards with legible descriptions, labels and his name. The earliest possible intimation of intention of exhibiting is desired. Kindly prepare a complete list of articles in your contribution and forward such list to

JOHN E. WILKINSON,
Supervisor of Exhibits, or to
W. E. WILLMOTT,
Chairman Programme Com.,
Dental College.

BOARD OF EXAMINERS DENTAL ASSOCIATION OF THE PROVINCE OF QUEBEC.

Programme of the Preliminary Examination for English-speaking candidates.

GROUP A.—LETTERS.

Latin.—Cæsar's Commentaries, Books I., II., III.; Virgil's Eneid, Books I., II. Questions on Grammar and Construction.

English.—Grammar and Analysis. A critical knowledge of one of Shakespeare's plays. *Hamlet* for 1901 and 1902. *Richard II.* for 1903 and 1904.

French.—Questions on Grammar and Analysis. Translations into English of Extracts from Fenelon's "Adventures de Telemaque." Translation of short English sentences into French.

Literature.—Principles of the subject, with the History of Greek and Roman literature of the classical age, and of English literature from the beginning of the seventeenth century to the present time.

History.—Outlines of Greek and Roman History, with a rather more detailed History of England, France and Canada.

Geography.—Modern, especially of Britain and France, and of their colonies and possessions, especially of Canada.

GROUP B.—SCIENCES.

Arithmetic.—To the end of Square Root, and a practical knowledge of the Metrical System.

Algebra.—To simultaneous equations of the first degree, inclusive.

Geometry.—Euclid, Books I., II., III., and the first twenty propositions of Book VI., also the measurements of the surfaces and volumes of the regular geometrical figures.

Botany.—As in Gray's "How Plants Grow."

Chemistry.—As in Remsen's "Elements of Chemistry."

Philosophy.—Logic, as in Jevon's Logic, to page 182. Intellectual and Moral Philosophy, as in Christian Brothers' Philosophy, by L. Poissy.

Physics.—Elementary Statics and Dynamics of Solids and Fluids, with a Chapter on Heat, according to Peck's.

NOTICE.—Candidates may take one group at one examination and the other group at the next subsequent examination, by paying \$10.00 extra. Failure in one subject nullifies the success on the whole group, but failure in one group does not nullify success in the other. In order to pass, the candidates must obtain 60 per cent. on Latin, English, French and Arithmetic, and 50 per cent. in the other subjects. Candidates must produce certificates of good moral character. The examinations are held at Montreal, on the first Wednesday in April and October. Applications to be made in person to the Secretary, accompanied with the receipt of the Treasurer for matriculation fee, at least ten days before the date of examination. Fee, \$20.00. Should the candidate be unsuccessful, one-half the fee will be returned.

TORONTO DENTAL SOCIETY OFFICERS.

At a meeting of the Toronto Dental Society on Wednesday night, interesting papers were read by Dr. Thomas Henderson and Dr. Harold Clark, and the following officers were elected: Hon. President, Dr. A. E. Webster; President, Dr. Frank D. Price; Vice-Presidents, Dr. G. Gow, Dr. W. C. Trotter; Secretary, Dr. W. G. L. Spaulding; Treasurer, Dr. E. C. Abbott; Councillors, Drs. McDonagh and J. F. Adams; Committee Memb. and Ethics, Drs. Wilkinson, Eaton and Clark; Dinner, Drs. W. E. Willmott, Eaton, and W. G. L. Spaulding. Programme Committee, Dr. C. E. Pearson, Dr. G. Howard, Dr. G. Greive.

Correspondence

REJOINDER TO DR. WILKINSON.

To the Editor of DOMINION DENTAL JOURNAL:

DEAR SIR,—As a rejoinder to Dr. Wilkinson's letter in last month's issue of the Journal, replying to mine of October's publication, permit me to defend my position somewhat, howbeit thanking the Doctor for his apparent care in picking out and enumerating my several phrases which he deemed "misleading, incorrect, or not true."

I am quite willing to admit to the profession that one who approached my letter in a spirit of critical antagonism would find some of these phrases ill-chosen; but upon reading Dr. Wilkinson's reply, I regretted to feel that he had totally missed the spirit in which I had written—the earnest desire for a hearty active co-operation, and a business-like organization which would ensure the confidence and progress of the members of the profession throughout Ontario.

Respecting the Doctor's "twenty-three phrases," alleged to be in some respect false, I find myself at a loss to lay hold of any argument which the Doctor has advanced to verify his position. He says there is "harmony, unity, strength, and provincial progress," though he furnishes no evidence of such, but leaves me in a position which I assure you is quite as distasteful to me, as it is unparliamentary on his part.

At the time of writing my first letter, I had sought in vain for evidence of activity which could be considered honestly representative of the Province, and now at the present writing, December 10th, the Corresponding Secretary tells me that of five district representatives to whom he wrote early in November, only two have responded, and one of these, in a letter dated November 25th, 1901, admits that he was not previously aware that he was a representative.

Moreover, I have been assured by the same officer that, up to November 1st, he had never written an official letter since his appointment in February, 1899, nearly two years ago.

The Programme Committee consists of three elected members plus the officers residing in Toronto. This Committee has held several meetings, at which was also the representative from District No. 1, who happens to be living here at present. The president was also at one of these meetings.

Of the seven district representatives, three have made no report either to the convener of the Programme Committee or to

the Corresponding Secretary. The members of this committee tell me that they have had no communication with the other officers, except the President and Secretary.

The Supervisor of Clinics has not had any report from any of the representatives regarding his work.

Of the three elected members of the Programme Committee, one wondered why he should be consulted regarding the date of the Convention; indeed, he admitted to me, on November 2nd, 1901, that he did not even know he was on the committee. He says he has not attended any meetings so far.

These few facts I have gathered in the last three days from the Toronto members; not to criticize what has been done or is being done, for I am now sure the programme will be good, and satisfactory in due time, but I just wish to prove to the profession that my statement of two months ago, "that we are in an unfortunate state of existence, without unity, without organization, without strength and without any means of provincial progress," is almost as true to-day as it was then, in spite of Dr. Wilkinson's argument (?) of "No, no!" and his statement that "the Executive is complete, organized and at work." Up to the present date (December 10th) there has been no meeting of the Executive.

I am quite willing to admit that there may be no necessity for one, that the work can all be done, and well done, by a few men in Toronto and in a few weeks; but I cannot understand how any man dare accuse another of making false statements of facts, as they were two months ago, when the officers of the Ontario Society are in this condition at this time of writing. But is this provincial representation and provincial progress? Does it not tend to prove that we are "too much taken up with private affairs to take an interest in public questions," which, had the complete sentence been quoted, could not possibly have been misconstrued into meaning anything else than public *dental* questions, rather than the ridiculous meaning which my respondent took.

Moreover, Dr. Wilkinson told me that part of the minutes of the last meeting are actually lost; true, as he says, the minute-book is in the possession of Dr. Eidt, the Secretary, but of what use is the mere book to the Society, when the very heart and kernel is gone?—when the names of the officers had to be hunted up in the back numbers of the daily press? I ask him, is this meeting my letter in the spirit of truth and progress?

If Dr. Wilkinson will be so gracious as to furnish a few *arguments* to prove that any of my other statements are "not true," omitting, of course, those phrases which I admit were not

well chosen, and which would be mere word-quibbling to discuss, I shall be pleased to further sustain my position.

Now, I know that these things, separately, savor of small things, and I had no desire to disclose them, and no love of cheap notoriety, but I regard these matters with such earnest concern and feel so keenly that we have not progressed as rapidly as the favorable conditions permit, and that we need more *active* and *constant* organization before we will, that I cannot refrain from going into details which otherwise had better be unpublished.

It is with genuine delight that I learn of definite arrangements for the Convention in February, even though the work be done by a few, and I have no doubt that that Convention will strengthen our position and mark an epoch in provincial dental public affairs.

Yours sincerely and fraternally,

CHAS. E. PEARSON.

To the Editor of DOMINION DENTAL JOURNAL:

DEAR SIR,—Glad you have called attention to some of the duties of secretaries. The following are the officers of Elgin Dental Society: President, Dr. O. W. Kennedy, Aylmer; Vice-President, Dr. Chas. Fitzsimmons, St. Thomas; Secretary, Dr. Henry H. Way, St. Thomas; Treasurer, Frank E. Bennett, St. Thomas.

Sincerely yours,

H. H. WAY.

St. Thomas, November 26th, 1901.

To the Editor of DOMINION DENTAL JOURNAL:

DEAR SIR,—In the November issue of the *Items of Interest*, under the caption of "A Novelty in Cheap Diplomas," I am made aware of the fact that my name, with others, appear upon the letter-heads and other literature of an institution styling itself, "St. Luke's Hospital," of Niles, Mich., wherein I am named as a member of the dental staff of this so-called "Hospital" (?). Such a statement is absolutely false, and wherever my name is used in connection with this institution it is done so without my consent or knowledge. I make this statement to clear myself and to protect the good name of the Dental Society of which I have the honor to be the Secretary.

Fraternally yours,

St. John, N.B.

FRANK A. GODSOE.

Review

Sexual Hygiene. Compiled from Books, Articles, and Documents, many not heretofore published. By Editorial Staff of the *Alkaloidal Clinic*. Published by the Clinic Publishing Co., Chicago.

This is a work of almost three hundred pages on a subject that has usually been considered too sacred or private to speak of, or even write about. However, the subject loses none of its privacy or sacredness by being approached and discussed as it is in this book. It is serious, thoughtful, and scientific. Many unhappy lives are pointed out to be due to a lack of knowledge of sexual matters. The authors say that only physicians and those interested in scientific work should read the book. This is surely a mistake; it should be read by everybody who has intelligence enough to comprehend the necessity for knowledge. Too much knowledge of the human race cannot be had by anyone. Physicians, as a rule (if they depend on the instruction they received in a medical college), do not know as much about sexual matters as the young man about town. There is not a medical college in existence that gives instruction on sexual excesses, sex in education, continence, masturbation, incomplete or delayed intercourse, frequency of intercourse, prevention of conception, posture during coitus, artificial fecundation, and restriction of marriage, as they are discussed in this work. From the title of the book, "Sexual Hygiene," one would expect a chapter on the prevention of diseases due to or transmitted by the sexual act. This book, as well as the medical colleges, leaves the physician with no knowledge of the prevention of venereal diseases. At college there is a great deal of instruction given about the prevention of tuberculosis, smallpox, diphtheria and leprosy, but not a word said about the prevention of gonorrhea. No physician has done his whole duty to his patient or the public when he treats an infectious disease unless he takes such precautions and gives such instructions to his patient that will prevent its transmission or prevent the patient from getting another infection at a future time. The authors of this work, which is the first in a large field, will no doubt add a chapter on venereal disease in the next edition. No person having the confidence of the marital relations of man can afford to neglect to read this excellent book.

Dominion Dental Journal

EDITOR:

A. E. WEBSTER, M.D., D.D.S., L.D.S. - - - - TORONTO, CAN.

93 COLLEGE STREET

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No. 12.

POLITICAL DENTAL LEGISLATION.

It is a peculiar coincidence that about the time the Yukon dental ordinance was passed, giving complete control of the profession in that territory into the hands of politicians, that the glaring defects of political control of the profession in the State of Illinois should come to light. The control of the professions by politicians does not seem to be a success. In every State in America where the professions are governed by political appointees, there is more or less friction between the Boards and the professions. The shortcomings of such Boards and the friction have been so detrimental to professional and educational progress, that in the older States of the Union the appointment of the different Educational Boards has been taken out of the hands of the politicians altogether. Under political control it is notorious that only those who are politicians first and professional men second are appointed on the Boards. These men get their

appointments because they have friends at court, and not because they know anything about the government of the profession. Such has been the case in Illinois and no doubt to some extent in other States. Although the profession of Illinois were aware of the fact that the Board was not acting as it should, they were powerless to have it changed. The Board, not being in any way responsible to the profession, and the public not knowing or caring what rascality was done, so long as they did not immediately suffer, allowed the American degree of D.D.S. to be dragged in the mud in the eyes of the world.

The conduct of the Board became so notorious that the State authorities were compelled by public opinion and the Washington authorities to make an investigation. It was found that almost every kind of scheme had been used to make money for the personal benefit of the individuals composing the Board. The title of L.D.S. was sold for as much as \$400 in one case. The price charged was governed by the applicant's ability to pay.

The Legislature has dismissed the whole Board, and indicted its Secretary and one Flynn in the criminal court on seven charges. Among the charges are forgery, fraud, bribery and conspiracy. This is political control with a vengeance. The trouble is, the public does not take sufficient interest in professional affairs to compel the Legislature to make good appointments to the Board, consequently the most disreputable political heelers are kept quiet by giving them positions on Boards.

With a history such as this is before the profession, it is not at all strange that they should look upon the Yukon ordinance with some misgivings, when the Commissioner is the judge as to ability to practise. In fact, he is the secretary, treasurer, registrar, examiner, prosecutor, and judge of the profession. This might be all right if he had the necessary information and used it aright. But when he says that most Canadian dentists get their education in the United States there arises some doubts in the minds of the profession as to his fitness for his duties. A man who doesn't know any more about dentistry than the ordinance would indicate will likely be ready to accept any kind of dental diploma from the United States, bogus or otherwise. With the example of so many good dental laws in Canada to copy from,



"AT HOME" COMMITTEE, 1901-02, ROYAL COLLEGE OF DENTAL SURGEONS

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E. H. Wickware, '02

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Secretary

T. A. Routledge, '02

Secretary

R. L. Dudley, '03

Chairman of the Standing Committee

J. MacD. Sharpe, '01

Secretary



it is hoped that the political control indicated in the ordinance in question will early pass away, and in its stead appear the more rational method, of the profession managing its own affairs. The possibilities for dishonesty in the hands of a weak commissioner are too great for such a law to safely exist for any length of time.

If a Dominion Dental Council were in existence, a part of its duty would be to look after such matters of dental legislation and see that the best interests of the profession and the public were served.

PROMINENT AUSTRALIAN DENTIST HONORED.

An interesting gathering was held in the quaint library of Trinity College on Saturday, November 2nd, when the degree of D.D.S., *honoris causa*, was conferred by the authorities of Trinity University upon Mr. E. Lenthal Oldfield, of Melbourne, Australia. This gentleman is founder and dean of the dental college at Melbourne, and has devoted an immense amount of his time, energy and means to the task of elevating the profession of dentistry in that far-away land. Owing to the conservatism of the authorities, overtures in the direction of securing affiliation of the Dental College with the University of Melbourne have thus far been unsuccessful. These efforts, coming to the notice of the governors of Trinity University, they determined to recognize the unselfish labors of the distinguished visitor by granting an honorary degree. There were present, by invitation of Provost Macklem, Professor Clark, Dean Rigby, Dr. J. B. Willmott, Dean of the Faculty of the Royal College of Dental Surgeons, I. H. Cameron, W. E. Willmott, G. S. Caesar, C. V. Snelgrove, Adam H. Wright, W. C. Trotter, R. J. Reade, J. G. McLaughlin, H. E. Eaton, J. E. Wilkinson, A. E. Webster, C. E. Pearson, G. S. Martin, W. F. Jackes, of Brisbane, Australia, Messrs. James Hedley, David Kemp, E. B. Brown, and Principal Manley, of Jarvis Street Collegiate Institute. The impressive ceremony of conferring the degree was performed by the acting Vice-Chancellor, Prof. Clark. The distinguished candidate was presented

by Dean Willmott in a few well-chosen sentences, and at the close of the ceremony brief speeches were made by Prof. Clark, Provost Macklem, Dr. Caesar, and Dr. Oldfield. Provost Macklem then invited the company to his cosy rooms, where refreshments were served and a pleasant hour spent in social interchange of thought.

Dr. Oldfield, who has been making a tour of England, Canada and the United States, for the purpose of making a study of advanced methods in equipment and teaching in dental colleges, expresses himself as profoundly impressed with the excellence of the provision made for students at the School of Dentistry of the R.C.D.S.O., in the matter of building, equipment, and staff. The unique condition existing in Ontario under which the dental profession owns and manages its own dental college without outside interference, strikes him as particularly commendable.

G. S. M.

APPROXIMATE CONTACT OF TEETH.

There seems to be a widespread idea among dentists that the contact points on approximating teeth are about from a third to a half way towards the gingival line from the occlusal surface. Crowns are most frequently made with the greatest mesio-distal diameter some distance from the morsal surface, thus leaving a V-shaped space for food to crowd into. They look like a barrel; big in the middle, instead of like a wash-tub, big at the top. The same mistake is made in fillings. It should be remembered that the greatest mesio-distal diameters of well-formed teeth is at the occlusal surface, and *not* near the gum line. Nature intended that food should not start to crowd in between the teeth.

WRITE YOUR OWN ARTICLES!

There seems to be an inborn desire in some men to appear different from what they really are. This desire to create a wrong impression often leads men to do strange things. Nobility has

often played the part of the slave, but more often the aim is to try to give out the impression that the individual is some important person, or has done some wonderful deed. It is a very commendable thing to always aim to leave a good impression on those with whom we come in contact, provided that impression is not made at the expense of some one else. A marked example of the "big Indian" idea is seen in those who write articles for societies, and copy the greater portion of them from others, without giving the authors any credit. Every little while an article appears as original matter in the dental literature, that is copied in whole or in part from another. It is only fair to the original author to give him credit. It does not detract from the merits of an article because some of it is taken from another author. It shows that the writer has looked up the subject. Articles are often sent to dental journals as original matter that as a matter of fact have no originality about them, the journal publishes them, and is "hauled over the coals" for doing so by the original author. The DOMINION JOURNAL has been unfortunate in this respect more than once, and hopes that dentists who write articles in the future for publication will either write their own or give the real author credit for quotations.

A DENTIST FOR SOUTH AFRICA.

The Department of Militia and Defence of the Dominion Government have under consideration at the present time the sending of a dentist with the Canadian Yeomanry (what a name!), now being equipped for South Africa. The necessity for such an officer need not be pointed out to the dental profession, or to those who have been in active service. But it is the duty of every dentist who has the comfort of the soldier at heart to use every influence with the militia authorities at his command to show them that the dentist is a necessary officer. The Government will make an appointment if they are made to see the necessity. Both the Governments of United States and Great Britain have seen the necessity, and there is no good reason why ours should not. Everybody speak out!

LAKER STILL WALKS!

Dr. Laker, of Dundas Street, Toronto, walked from Hamilton to Toronto on Thanksgiving Day, breaking the former record held by William O'Connor, the famous oarsman. Dr. Laker left Hamilton 6.35 a.m.; arrived at Toronto 3 p.m., resting thirty minutes; distance, forty miles; time, 7 hrs. 35 min. O'Connor's best time was 9 hrs. 28 min., with a rest of one hour and 30 minutes.

Editorial Notes

WEIGH your gas cylinders before you use any of the gas.

WEIGH your gold solder as soon as you open the envelope.

BE sure that the arsenic powder you buy is not all chalk.

JAMES HOGAN, R.C.D.S., 1901, has begun practice in Windsor, Ont.

DR. BRACE, of Brockville, has again decided to go South for the winter.

WHY extract the first permanent molar when it can be treated and saved?

DR. JOHN L. McLEAN, R.C.D.S., 1901, has begun practice in Havelock, Ont.

DR. D. C. SMITH, of Stouffville, Ont., was married on Thanksgiving Day.

DR. L. T. KENNEDY, R.C.D.S., 1900, has moved from Havelock, Ont., to Arthur, Ont.

THERE is a bogus diploma mill in Jersey City, which requires attention almost as badly as those in the West.

DR. BALLACHY, R.C.D.S., 1898, now of Buffalo, recently read a paper at Rochester on the History of Amalgam.

THE constitution of the Ontario Dental Society says that the officers shall hold office until their successors are appointed.

A DISK of aluminum in the ordinary disk mandrel, and dipped into carborundum dust, moistened with glycerine, will cut down a tooth very rapidly.

DR. ROSE, the author of that excellent poem, "Extension for Prevention," from the Easterner's standpoint, in this issue, is a Canadian now living in New York.

NOTE.—Up to the present time the Journal is not aware of a dentist resident in Ontario who will not be present at the meeting of the Ontario Dental Society in February, 1902.

PROGRESS is being made towards the Dominion Meeting, to be held in Montreal next summer. There is almost programme enough now arranged for to make an excellent meeting.

DR. C. T. PIPER, who has been for some years in practice with Dr. H. R. Abbott, of London, Ont., is now in Toronto spending some time with his parents before he begins practice again.

THE demonstrators appointed for the Session of 1901-2 in the Royal College of Dental Surgeons of Ontario, are : Ernest H. Wickmore, Garnet M. Trewin, H. S. Simpson, W. E. Cummer, Charles Sutton, Andrew Brown, and W. N. Brown.

MR. STANLEY MOORE, who so quietly withdrew from the class of '02 in the R.C.D.S. two years ago, has turned up at his home in Norwich. He has been in England, Scotland, Prussia, and South Africa; practised dentistry for some time in Durban.

DR. FRANK EDMONDS, formerly of British Columbia, Toronto, Germany, and Alliston, Ontario, has gone to Manitoba to try his fortune. For the past few months Dr. Edmonds was carrying on the practice of the late J. G. Sutherland, of Alliston.

DR. HENRY T. WOOD, who practised for so many years at 3 College Street, Toronto, has gone to Cobourg, Ontario, to live and enjoy the company of a very large number of friends. The Toronto profession loses the immediate association of a man whose chief aim was the betterment of the dental profession.

At the recent Dental Society meeting in Rochester, Dr. J. B. Ernsmere, of Buffalo, read a paper in which he expressed the opinion that pyorrhea alveolaris was due to drinking coffee. Although he reported a number of cases from practice to prove his contention, he had few, if any, who coincided with his views.

A NUMBER of dentists use a cork-screw plugger point in an automatic mallet to condense gold with; will some one explain the rationale of using curved points under a direct blow. Can it be expected that the force will follow the curves of the instrument and be expended at almost right angles to the shaft of the instrument?

THROUGH the kindness of Dr. J. T. Kennedy, of St. Thomas, the Journal has obtained the names of the officers of the St. Thomas Dental Society. He also says that the Secretary will report the proceedings from time to time, and send any original articles for publication. The Journal and the profession have an interest in the St. Thomas Society. The officers are: President, O. W. Kennedy, Aylmer; Vice-President, C. Fitzsimmons; Secretary, H. H. Way; Treasurer, F. E. Bennett.

J. ROSS HARDY, D.D.S., of San Diego, Cal., Instructor in Crown and Bridge-Work, 1896-1900, Tuft's College Dental School, Boston, Mass., under date of October 21st, 1901, writes of Antikamnia preparation as follows: "Although not located in as large a city as formerly, I still have abundant opportunities to use and to recommend the use of five-grain Antikamnia Tablets, which I do in every possible case, for I believe they occupy a place all their own, in the dentist's medicine chest. It is my custom to prescribe the tablets in cases of acute pain in the treatment of abscessed teeth, both before and after their extraction. In cases of very severe pain, I prescribe one tablet every half hour until three are taken, and I have always had the best effects to follow their use. Of late I have also been using Antikamnia and Codeine Tablets in cases of severe odontalgia and they have relieved promptly. They were effectual in cases which nothing else would relieve. A crushed Antikamnia Tablet placed in the socket after extraction and covered with a bit of cotton, eased the pain wonderfully."

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